Freight Traffic Issue: SPECIAL REPORT ON LOSS AND DAMAGE

March 25, 1968

RAILWAY AGE

THE TRANSPORTATION WEEKLY

Stopping the dollar-drain:

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The new look in L&D prevention p. 40

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GOLDEN SPIKE CENTENNIAL:

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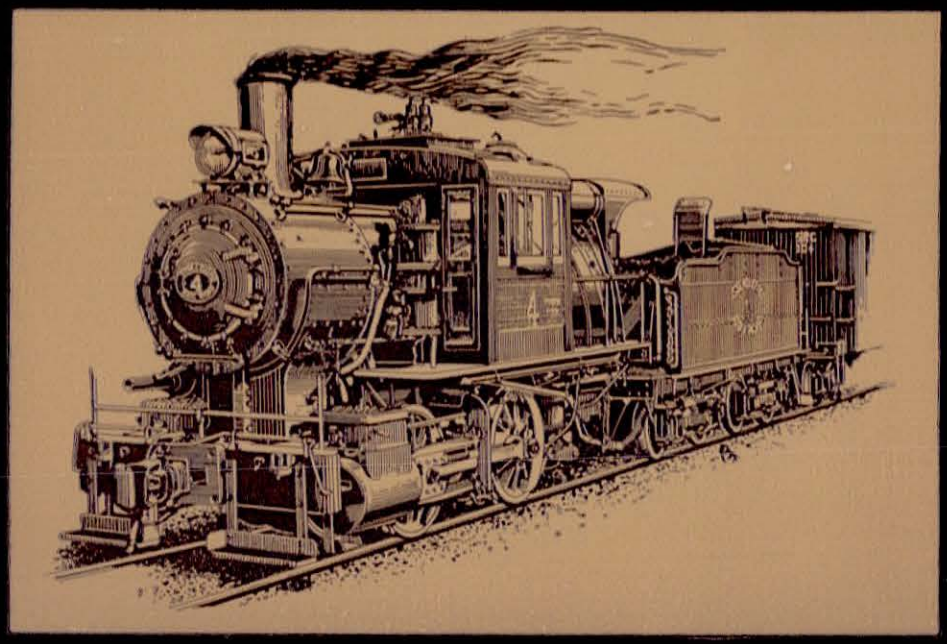
A golden opportunity for railroads

p. 52

Road to Paradise



There were few passengers to Paradise, Penna. until the Strasburg R. R. brought back steam. Now the shrill shriek of the whistle, black smoke puffing out over the cornfields, and waiting Amish buggies bring them by the thousands. Enough passengers to make Strasburg the site of Pennsylvania's proposed rail museum.

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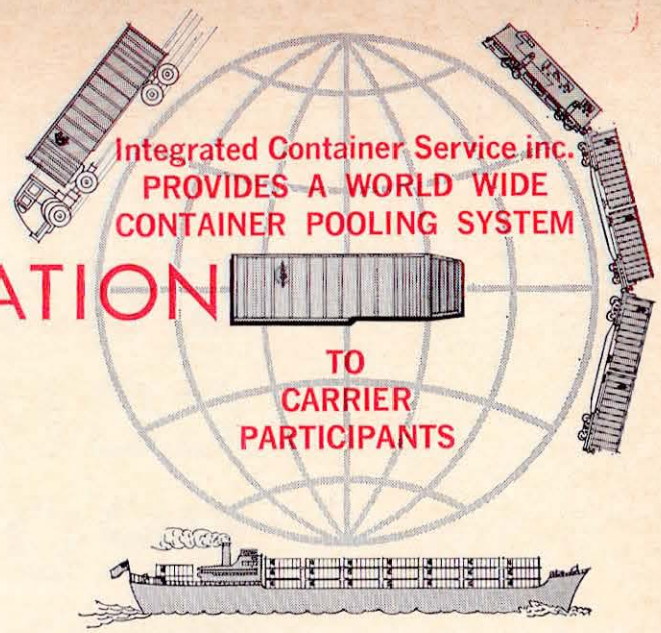

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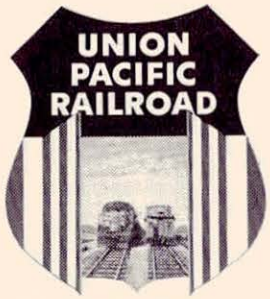

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RAILWAY AGE

March 25, 1968 • Vol. 164, No. 12

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. . . AND COMING NEXT WEEK

Is there hope for the passenger-train—and if so, where does it lie? In the annual passenger-service issue, Railway Age editors will take an in-depth look at one of the most troublesome problems on the railroad scene. This will be a two-in-one issue, dated April 1/8 and mailed April 5. Also: A special progress report on BART, in text and photos.

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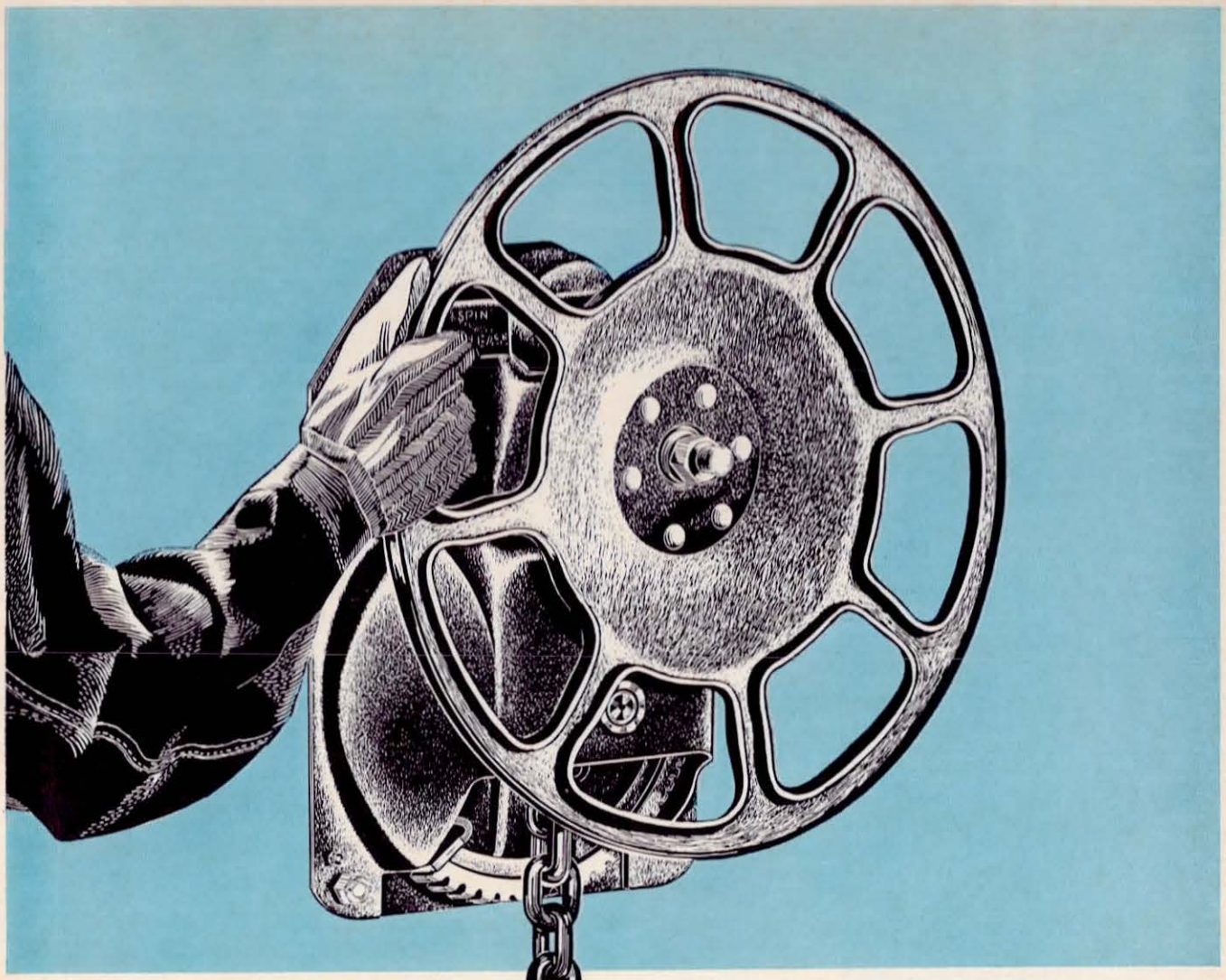

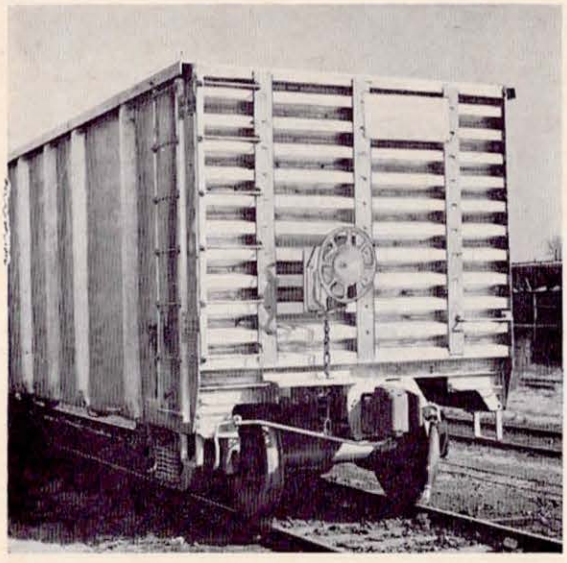

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SHORT AND SIGNIFICANT

Big car order placed by Penn Central

The first large car order to be placed by the recently-merged Penn Central was announced last week. The road is spending $38.5 million for 2,750 heavy-duty gondolas to be built at the Samuel Rea Shops, Hollidaysburg, Pa. Delivery of the order has already begun and it is expected to be completed by July (see p. 89). President Alfred E. Perlman said the order represents "a major step in our program to provide the most modern transportation service for our customers throughout the area we serve."

President sets Transportation Week date

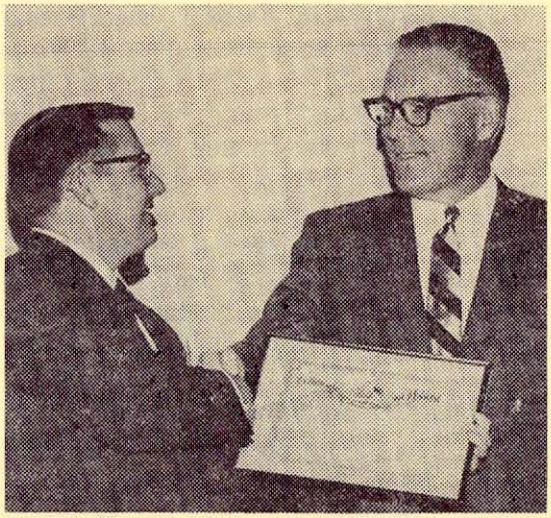
President Johnson, in a proclamation, has set the week of May 12 as National Transportation Week, and Friday, May 17, as National Defense Transportation Day. In remarks at the White House signing, the President said the Department of Transportation, in its year of existence, "has already begun to strengthen the private and public partnership in the field of transportation." He praised DOT Secretary Alan Boyd "as a proven executive and one of our most valuable public servants."

Trailmobile gets a new president—George L. Green

In addition to his duties as executive vice president of Pullman, Inc., and president of the company's Pullman-Standard Division, George L. Green has now been named president of Pullman's Trailmobile Division, which builds trailers and containers. He succeeds J. M. Gilroy in that position. E. D. Quan, formerly vice president, manufacturing, of Pullman-Standard, has been appointed vice president, operations.

Washington gets the word on "The New Railroads"

Key Congressional leaders, members of the Interstate Commerce Commission, and Transportation Secretary Alan Boyd were among 160 Washingtonians who turned out last week to hear the story of "The New Railroads"—the presentation of the Railway Progress Institute which has already been enthusiastically received in other major cities around the country. RPI Chairman W. Ashley Gray, Jr., gave the presentation at a luncheon co-sponsored by Southern President W. Graham Claytor, Jr., and AAR President Thomas M. Goodfellow. Gray presented a bullish picture of the potential of railroading — and also seized the occasion to present the case for important railway goals in which Washington will have a deciding voice. These included the need for a new rate increase, approval of mergers, real-estate tax relief and "swift and equitable arbitration" of labor disputes.



A shipper gets praised for L&D effort

Weyerhaeuser, one of the giants in the U.S. lumber industry, has made a thing of teaching its people to handle its products carefully. The company's efforts to improve loading practices and to develop safer loads have been recognized by the Pacific Northwest Advisory Board, which presented Weyerhaeuser with its first award for prevention of loss and damage. Accepting the award for the company, which last year shipped 200 million board feet of lumber on 6,000 flat cars, is William L. Bush, director of land and air transportation and traffic, right. Ivan Olson of the Advisory Board made the presentation.

MONDAY MORNING REPORT

GLOOM AND DOOM? NOT AT REMSA

It has been said that pessimism cannot exist without a solid base of optimism—because without light there are no shadows. In the railway equipment marketplace today, the shadows are all too easy to identify. But there is light, too—and it was clearly in evidence last week at Chicago's International Amphitheater, where the Railway Engineering Maintenance Suppliers Association (REMSA) put on an equipment exhibit that has to be rated, in show biz parlance, as first rate—a smash hit.

WHAT 2,500 SHOW-GOERS SAW . . .

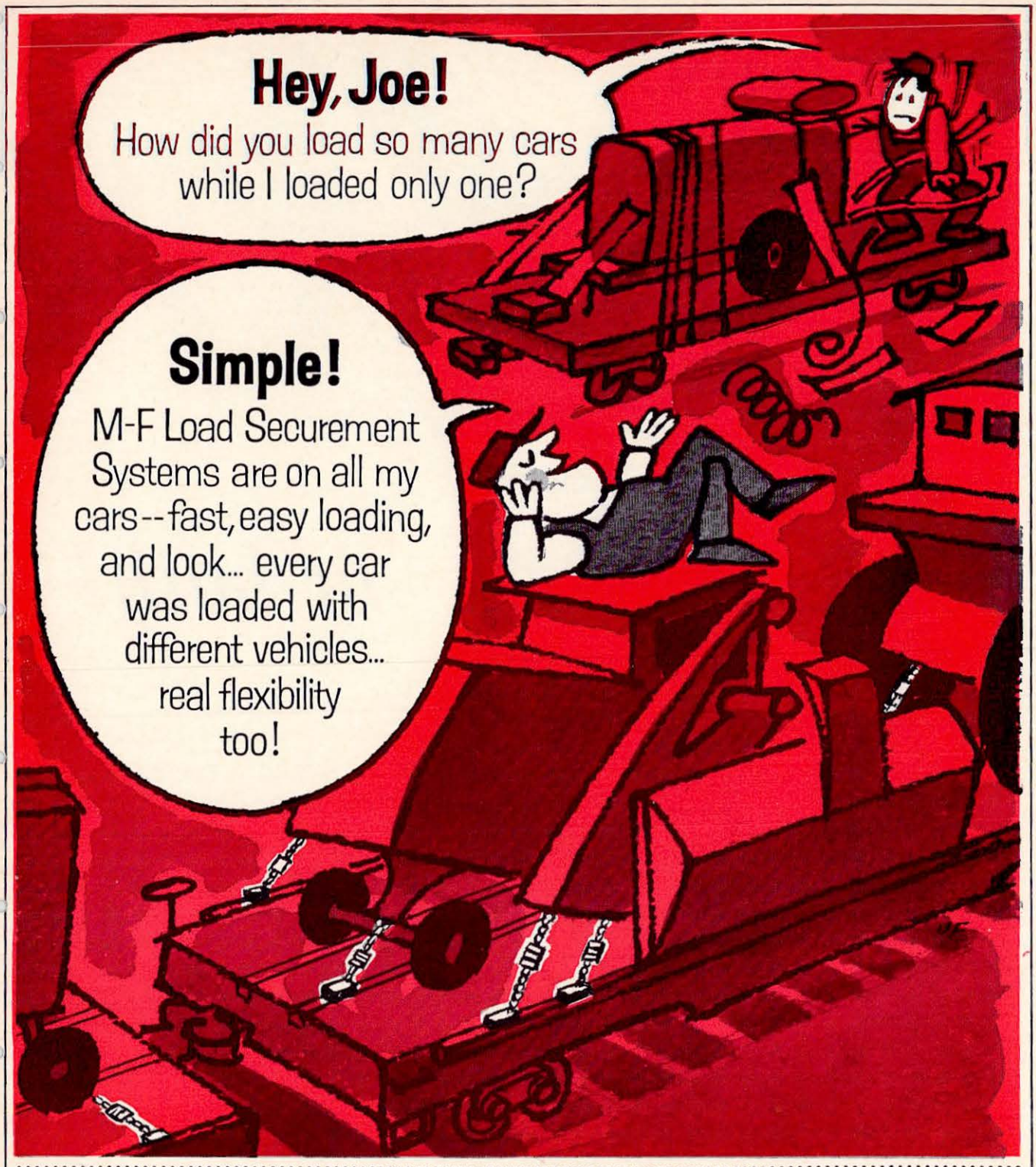
REMSA's show, staged in conjunction with the convention of the American Railway Engineering Association, was an unquestioned record-breaker in quantitative terms. By conservative estimate, more than 2,500 AREA delegates inspected $8,000,000 worth of equipment (ranging from a 45-cent rail anchor to a $100,000 leveller-tamper-liner) handsomely arrayed over 66,000 square feet of space by 103 individual exhibitors. ("Interest was so great," commented Bill Joy, REMSA's executive secretary, "that we could have sold another 35,000 square feet.") And qualitatively—both as to the equipment shown and the professional standing of those who came to look and in many cases to buy—there was general agreement that this show set new high standards.

. . . AND WHY THEY WERE IMPRESSED

What REMSA provided was a dazzling showcase of the great strides that are being made in M/W technology—all designed not only to improve efficiency but to save money in the process. Return on investment is great in this field: It isn't unusual for one of these machines to return its cost in a year. One railroad engineer summed up his reaction this way: "This is the one place where I can find under one roof practically all the latest devices and machines that can help me do a better job, and cut my management's costs."

PROBLEMS, YES; BUT THE KEYNOTE IS PROGRESS

This is not to suggest that all is rosy for the chief engineer in a time of general budget-tightening. He still needs more resources than he can lay his hands on to do the job he wants to accomplish. But if the mood at the Amphitheater last week was not one of unrestrained optimism, it was still one of optimism and it pervaded exhibitors and visitors alike. For railroaders who have heard nothing but gloom, doom and technological gaps in recent weeks and months, REMSA's show was a shot in the arm. It was new proof, if any was needed, that while much may be wrong with railroad technology, there's a lot more that's right, and as up to date as tomorrow.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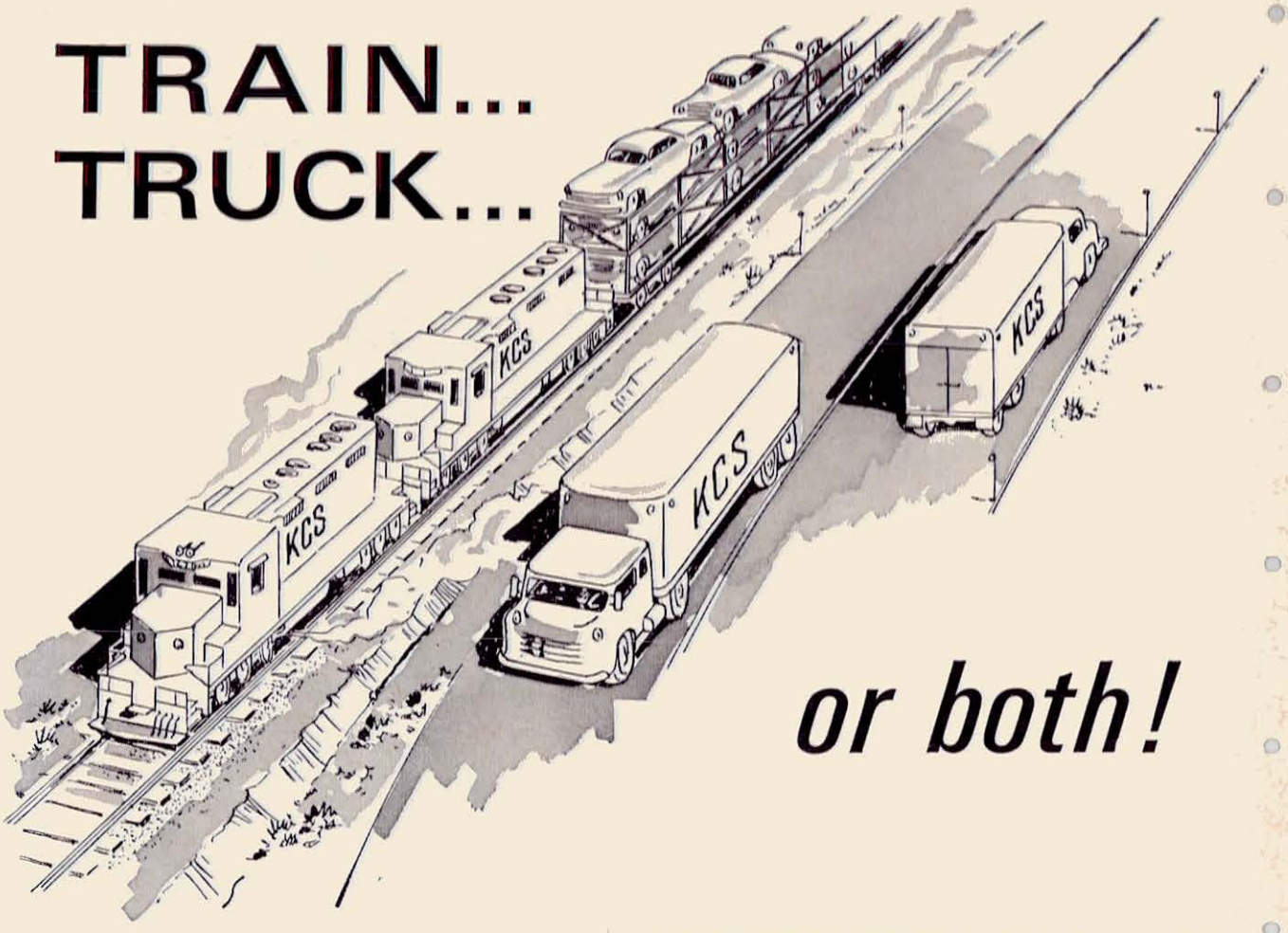

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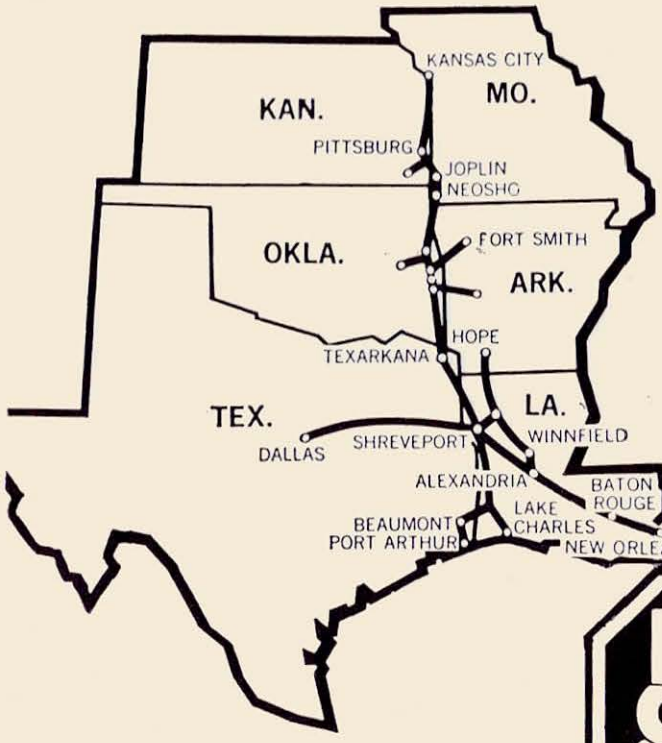

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RAILWAY AGE
THE TRANSPORTATION WEEKLY
March 25, 1968

WEEK AT A GLANCE

Common ownership study proposed

The public needs to realize the potential benefit of common transport ownership. And the way toward that goal is through an impartial study of integrated transportation, Downing B. Jenks, Missouri Pacific president, said last week during a management conference on financial prospects for transportation at the Transportation Center at Northwestern University. "Such a study by an influential and impartial group could result in broad public discussion of the service and the advantages to carriers and to the general public. It should consider the structure and the operation of a corporate body capable of integrating several or all of the modes of transportation," Jenks said.

Railroaders give the First Lady a hand

Washington's Union Station, cited by many experts for its architectural beauty, has caught the fancy of Mrs. Lyndon B. Johnson. The First Lady's Committee for a More Beautiful Capital has taken an active interest in plans to convert the station into a National Visitor Center (RA, Mar. 18, p.11). At a session to discuss the project were Secretary of the Interior Stewart L. Udall, whose department will operate the tourist information and entertainment facility, C&O/B&O President Gregory S. DeVine, Mrs. Johnson, and Penn Central Chairman Stuart T. Saunders.

Northern lines' merger again OK'd

Great Northern Pacific & Burlington merger is one step closer to consummation this week—mainly because Northern Pacific stockholders refused to be swayed by the arguments of a dissident group. Special meetings of Great Northern, NP and Burlington shareholders were held March 14, and with GN and Burlington there was no problem. GN's meeting lasted less than an hour; 79.9% of the eligible stock was voted in favor of merger, only 0.17% against. Ownerlines GN and NP voted Burlington in. But then came the long wait. NP's meeting was adjourned until March 16 and then until March 18 to allow time for unscrambling the proxies. When the vote-count was announced, it wasn't even close: Merger got a favorable vote from holders of 73.2% of the eligible stock; the dissident group won the vote of 2.6%. Main concern of the dissidents was treatment of NP's natural-resources landholdings in the merger agreement.

Next move in the Northerns' case will come from the ICC, which is now holding six petitions for reconsideration, including one filed by the NP dissident group. If the Commission rejects the half-dozen petitions and if nobody takes the case to court, merger could take place as early as June 1—or roughly 13 years after presidents of GN and NP began informal merger discussions.

Carriers, BLF&E headed for mediation

Next step in the current wage—rules case involving the Brotherhood of Locomotive Firemen & Enginemen will be mediation. National negotiations have been broken off, and both the carriers and the union are asking the National Mediation Board to step in. Similar action has already been taken involving the biggest of the operating unions, the Brotherhood of Railroad Trainmen.

GUS WELTY

LINES ON LABOR

THE TEAMSTERS UNION doesn't enjoy the best of reputations among transport unions. It was expelled from the AFL-CIO. Its president is currently resident in a federal prison. Its record is spotted with outside investigations of one sort or another. Yet the industry which harbors these rough-hewn union types shows steady increases in competitive strength. Why?

GENERAL VICE PRESIDENT Frank E. Fitzsimmons, the man who took over when they waved goodbye to James R. Hoffa, sums up the union position: "Teamster leadership is realistic and practical. It keeps in mind the competitive situation which confronts the employers. It shares with the industry a common objective—a healthy industry which can pay decent wages."

DECLARATIONS like that deserve a follow-up. And Fitzsimmons can muster a good measure of backing for what at first glance seems like a self-serving and somewhat questionable description of Teamster policy. He reviewed the situation for a transport management-labor conference last week at the Transportation Center at Northwestern University.

THE TEAMSTERS' CHIEF points out, for instance, that "although trucking is part of a transport complex which historically has had painful and chronic labor-management problems, such problems have been conspicuously absent in trucking." The industry, he says, is unique "in that it makes up the only group of employers in transportation who express little concern over work-rules. This is so because the Teamsters and the truckers have developed a relationship and accommodation in their collective bargaining which leaves trucking management free to compete. . . . The union does not stand in the way of technological progress. It constantly preaches to its members the industry's need for flexibility. Our contracts reflect this policy: No hidebound rules, no make-work practices, no narrow jurisdictional squabbles."

EMPLOYERS might not go all the way with Fitzsimmons in his outline of Teamster progressiveness. Still, he tells a persuasive story—and the record of industry progress does not shout him down. In this context, then, it's significant to note the Teamster awareness of transport intermodality. Automation and jurisdiction are the problems, Fitzsimmons declares: "Unity among the various transport unions would appear to be the answer."

'68 capital spending put at $1.27 billion

Railroads now plan to invest $1.27 billion in capital improvements during 1968, according to a survey conducted by the Department of Commerce and the Securities and Exchange Commission. This would be a 17% drop from the $1.53 billion spent in 1967. U.S. business generally plans capital investments totaling $65.2 billion this year, up 6% from 1967, according to the survey. Non-railroad transportation companies anticipate expenditures totaling $4.51 billion, an increase of 17.7% over last year. Railroads are the only group (out of eight surveyed) contemplating reduced expenditures. In releasing the survey, the Department of Commerce commented that "railroads expect to reduce their investment in equipment substantially while maintaining road expenditures at about the same rate as in 1967."

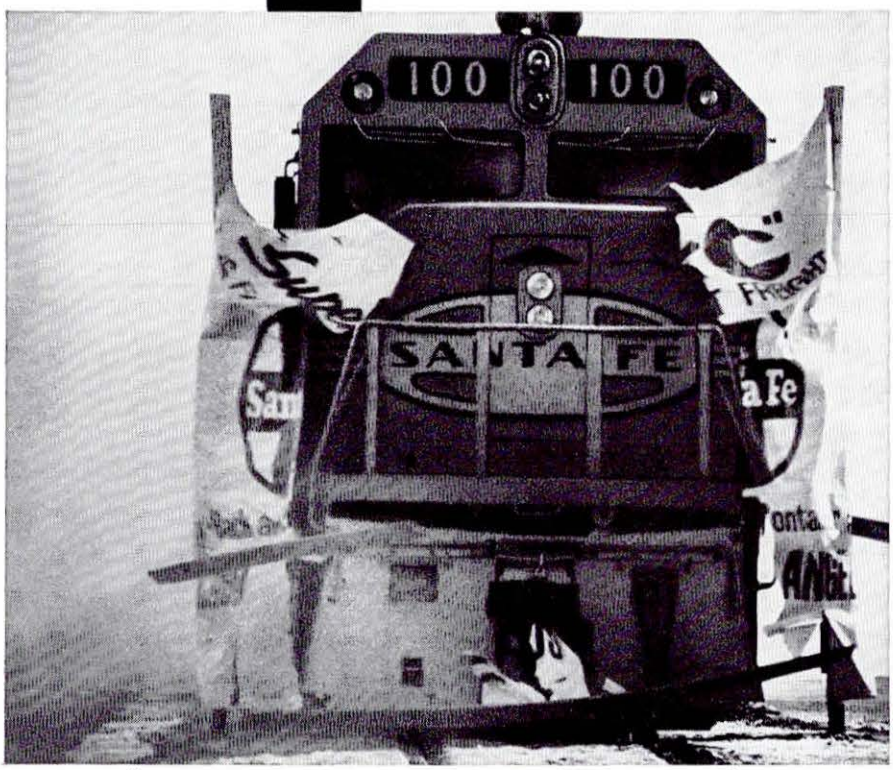
Railroads need more unity, says FRA chief

Is the public getting "good railroad transportation"? Federal Railroad Administrator A. Scheffer Lang posed the question in an address before the Western Railway Club in Chicago last week—and he offered an answer. "The two most effective criteria which we can apply in answering that kind of question are the rate of profit and the rate of growth in the industry," said Lang. "Unfortunately, a look at these criteria does not lead us to any very encouraging judgements."

One thing railroads ought to do, Lang insisted, is work more closely together toward the solution of industry-wide problems. He mentioned a number of problem areas which he believes require an industry-wide approach — and he made it clear that he thinks no problem is more acute than that of passenger-train discontinuances:

"I do not think there is any easy answer to the market shift away from conventional intercity railroad passenger service; but one would have difficulty making a case that the railroad industry was working hard to find some answer to that shift. Except for the cooperative projects between our Office of High Speed Ground Transportation and the Penn Central and New Haven Railroads, there is no visible evidence that the *industry* is doing anything other than trying to get out. If this is the decision and direction, what steps have been taken to inform the public as to why?"

Market opener.



"Super C" service operates under Piggy Back Plans II½ and III, Santa Fe provides trailer or container, or will pay an allowance for equipment furnished by shipper, for ramp-to-ramp service to and from our Corwith Terminal in Chicago, Argentine Terminal in Kansas City and our Hobart Terminal in Los Angeles.

This service is available daily, except Sunday, leaving Chicago 2 PM and Kansas City the same evening, arriving Los Angeles 4 AM (second morning). Eastbound service leaves Los Angeles 10 AM, arrives Kansas City the following evening and Chicago 4 AM (second morning).

"Super C" service costs $1,400 per trailer or container loaded to a weight not to exceed 35,000 pounds. An additional charge of $4 per 100 pounds is provided where the weight exceeds 35,000 pounds.

Now running– The world's fastest freight train, trimming 21 hours from Chicago-Los Angeles service.

With second-morning delivery, "Super C" is faster than trucks and cheaper than air freight. You can serve customers you never thought of reaching before. ("Super C" is also now serving the Kansas City market.)

Please don't think of us as just another railroad...
Santa Fe is the moving part of your marketing arm.

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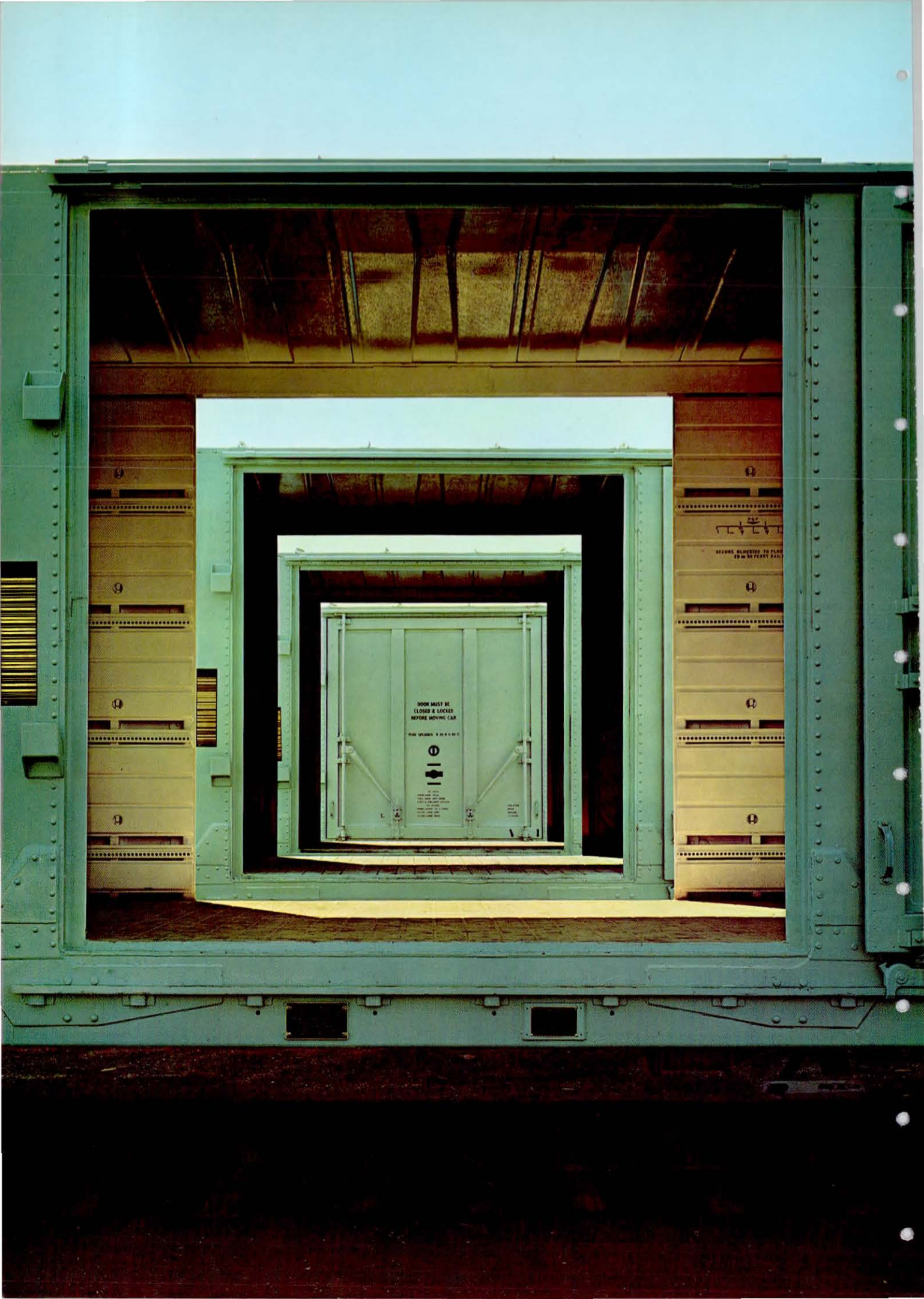
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Once upon a time, you could buy a Pullman-Standard box car with a P-S sliding door. But if you needed another type, you bought somebody else's door. And so did we. But we discovered some great new things opening and closing other people's doors, and so we've opened a whole line of doors of our own. They're the finest new doors you can buy—plug, sliding or combination, in any size, in any quantity, to fit any car. Even somebody else's.

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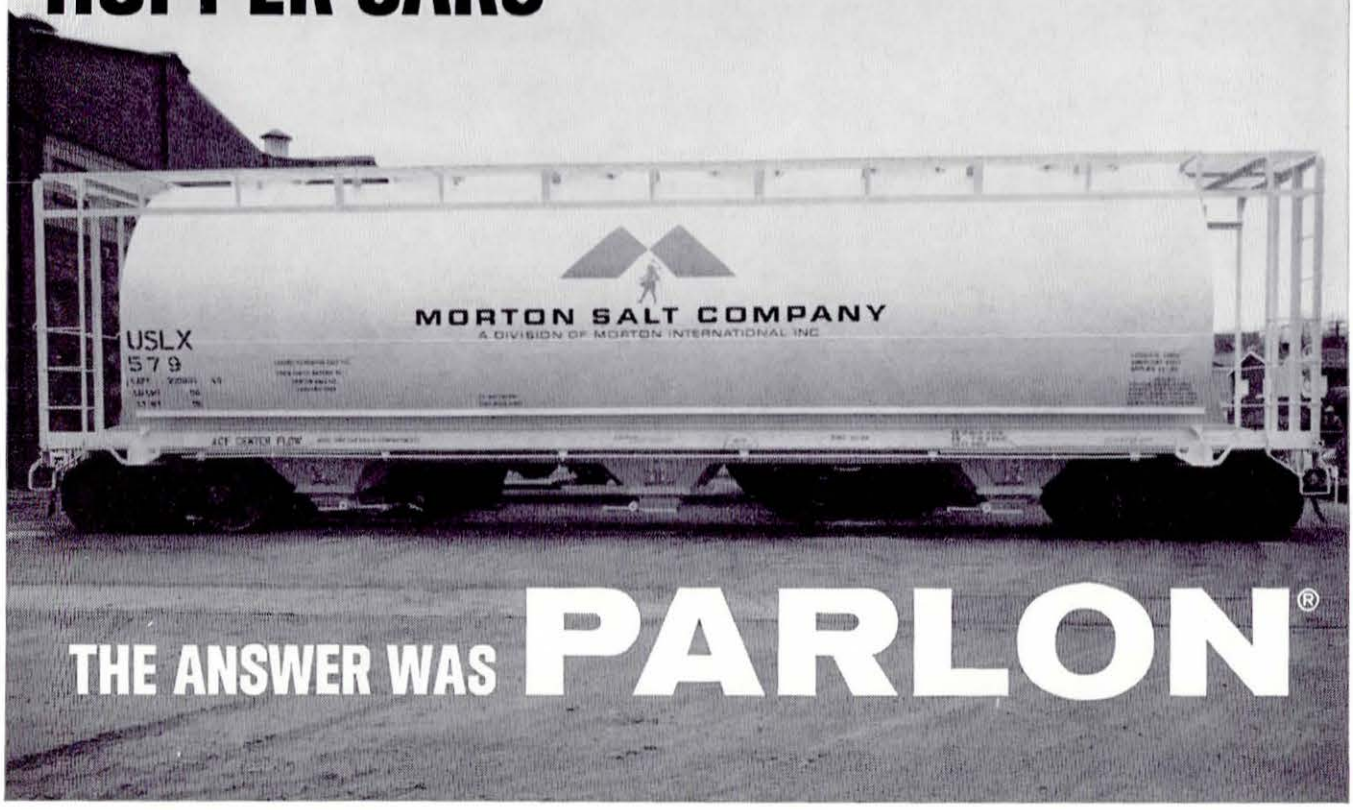
For MORTON SALT COMPANY and UNITED STATES RAILWAY EQUIPMENT COMPANY'S HOPPER CARS



THE ANSWER WAS PARLON®

United States Railway Equipment Company needed a paint for covered hopper cars under lease to Morton Salt.

They came to Parlon for help.

Why?

Simple.

Parlon paints, based on a chlorinated rubber system, have been tested and proved. Ships using Parlon paints have traveled the high seas the world over...and Parlon held up...yes, held up, and then some, against water, wind, and weather. Railroad cars using Parlon paints have also run the gamut of every kind of paint-damaging environment the country has to offer...and, once again, Parlon held up...and then some.

That was answer enough for both Morton and U.S. Railway. Now Morton's leased USLX covered hopper cars have exterior finishes in Parlon-based protective coatings. They look great—and know what? The Morton people may want to have U.S. Railway paint them every six or seven years, but they really won't have to.

The next time you need a paint to do a real piece of work, take a tip from Morton Salt and U.S. Railway.

Pick Parlon...the paint that's really been around. Polymers Dept., Hercules Incorporated, Wilmington, Delaware 19899.

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*Hercules trademark. Paintenance with Parlon is the engineered use of paint to economically maintain the appearance and function of structures and equipment.

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Below you see clear proof that Shell Tornus* Oil works to keep engines clean. Far cleaner than any conventional oil. Cleaner than the most widely used superior-type oil.

Tornus Oil's remarkable performance is *verified:* Tornus Oil is approved by General Electric as a Superior Lubricant for its highest horsepower locomotives. It's listed by General Motors as a Widely Used Oil for turbo and non-turbocharged engines. It's fully approved by Alco Products. And it's in use by over 25 railroads to date, in both old and new locomotives, all makes, in all kinds of service.

Let Shell demonstrate that Tornus Oil is a superior Superior Lubricant in *your* equipment. Call one of these offices: New York (212) 586-6000; Chicago (312) 341-3275; San Francisco (415) 392-5400. Or write: Shell Oil Co., Railroad Sales Dept., Room 3844, 50 West 50th St., New York, N.Y. 10020.

RPI RAILWAY PROGRESS INSTITUTE

SHELL

*Trademark Shell Oil Company

MOST WIDELY USED SUPERIOR-TYPE OIL

Note lacquer buildup in this piston's ring belt area—result of a Texaco Diesel Screening Test in which both pistons shown were run 50 hours in a single-cylinder, high-output diesel test engine at 1500 rpm, 225°F. oil gallery temperature. Oil performance in a TDST is evaluated by a demerit system applied to the undercrown and ring belt areas. The piston above, lubricated with the most widely used superior-type oil, rated 142.2 demerits.

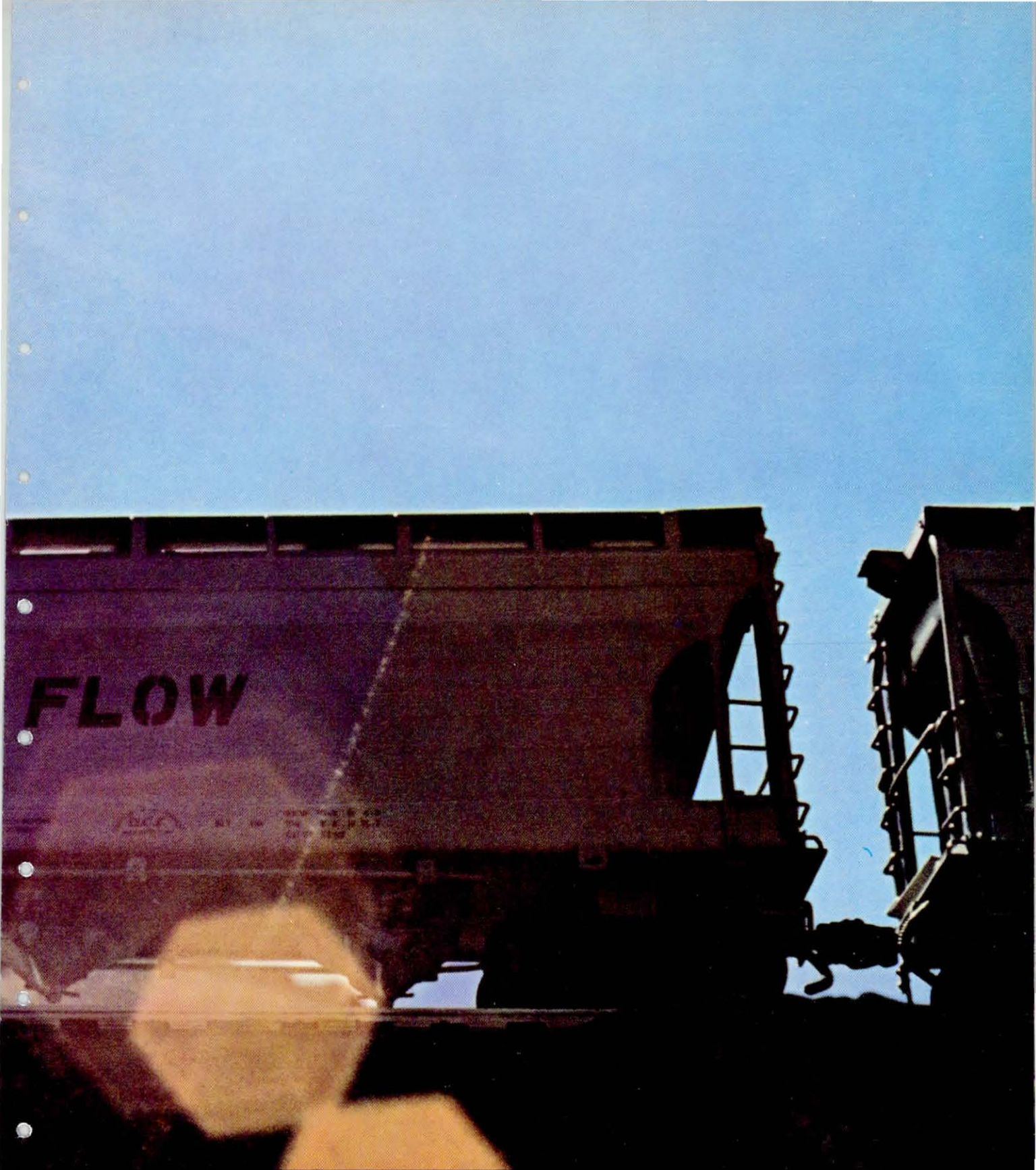
SHELL TORNUS OIL

Note the virtual absence of lacquer in this piston's ring belt area—yet both pistons shown are specimens from identical Texaco Diesel Screening Tests. In a TDST, conventional railroad engine oils usually rate 180 to 210 demerits. High-dispersancy oils usually rate 110 to 150 demerits. The piston, *left,* lubricated with the most widely used superior-type oil, rated 142.2 demerits. The piston, *above,* lubricated with Shell Tornus Oil, rated 86.5 demerits.

What's ahead in the year 7 A.C.F.?

(After Center Flow™)

MEMBER RPI



More and more decision-makers will join the Center Flow Revolution.

In 1968 we celebrate the 7th Anniversary of the start of the Center Flow Revolution. Since 1961, the Center Flow car has been offering dry bulk shippers a standardized covered hopper matched to the demands of the product. At last count, over 20,000 Center Flow cars had been placed in service. Thousands more are on the way.

It had to happen, because the Center Flow car offers unique advantages. Car sizes from 2970 cu. ft. to 5700 cu. ft. A pear shape to give fuller use of cube. No interior sills or obstructions to cause hang-up or residue. Hatches and outlets to meet any existing handling system. Whatever you want to move—flour, sugar, cement, you name it—we have a Center Flow car designed to move it. And you can unload by gravity, pneumatic or pressure differential—or, for that matter, by all three methods with the same car.

Join the Center Flow Revolution. Call or write the American Car & Foundry Division, ACF Industries, Incorporated, St. Charles, Mo. 63301.

acf

ACF INDUSTRIES

Why do so many corporations contribute to America's colleges?

1. ( ) they want to help the colleges

2. ( ) they need the leaders colleges train

You were right if you checked No. 2.

American corporations want to make sure there will be enough college-trained leaders to fill the management jobs open today and in the future.

This is good insurance for business.

And the need, we must remember, isn't getting smaller.

World trade is developing fast; business is getting more competitive, more complex; science is introducing new products and processes rapidly.

College-trained men and women are needed, in increasing numbers, to plan and direct the activities of business.

But the colleges can't do the training job alone. They need classrooms, laboratories and facilities, yes. But even more, they need backing to maintain a staff of top-notch teachers.

This is the human equation that makes the difference in reaching the **margin of excellence** needed in the U.S.

This is everybody's job, but especially industry's.

Of course American business wants to help the colleges, so you were also right if you checked No. 1. College, after all, is business' best friend.

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At one time it would have cost too much to link this small railway station to the line's main microwave system. But not any more—thanks to the 71F by Lenkurt.

Lenkurt's 71F is a 1 to 300-channel 2 GHz microwave radio system designed specifically to provide economical low density "feeder" routes from communications main lines to remote railway stations and control centers.

Its 2-Watt output improves path reliability at the same time as it decreases antenna size and tower loading. The radio cabinet and all plug-in units are r-f shielded to eliminate VHF interference. And its modular construction means easy maintenance and few spare parts. What could be more important when your 71F is miles from the nearest technician?

For more information about the economical 71F, call or write Lenkurt Electric Co., Inc., San Carlos, California.

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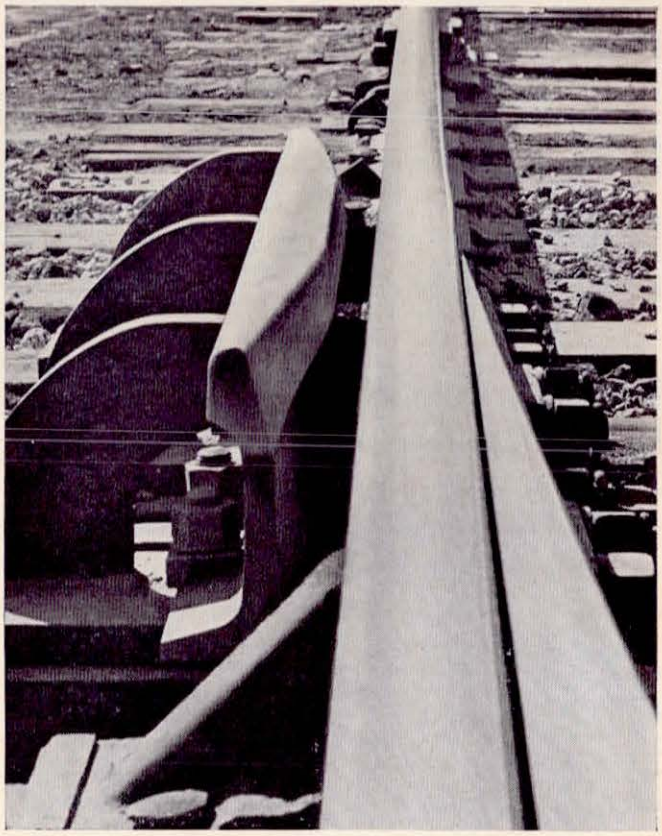
No more point-picking!

Makes things better for you

Bethlehem's famous Switch Point Guard Rail Design 755-B protects those valuable switch points, and reduces the possibility of derailments in yard operations.



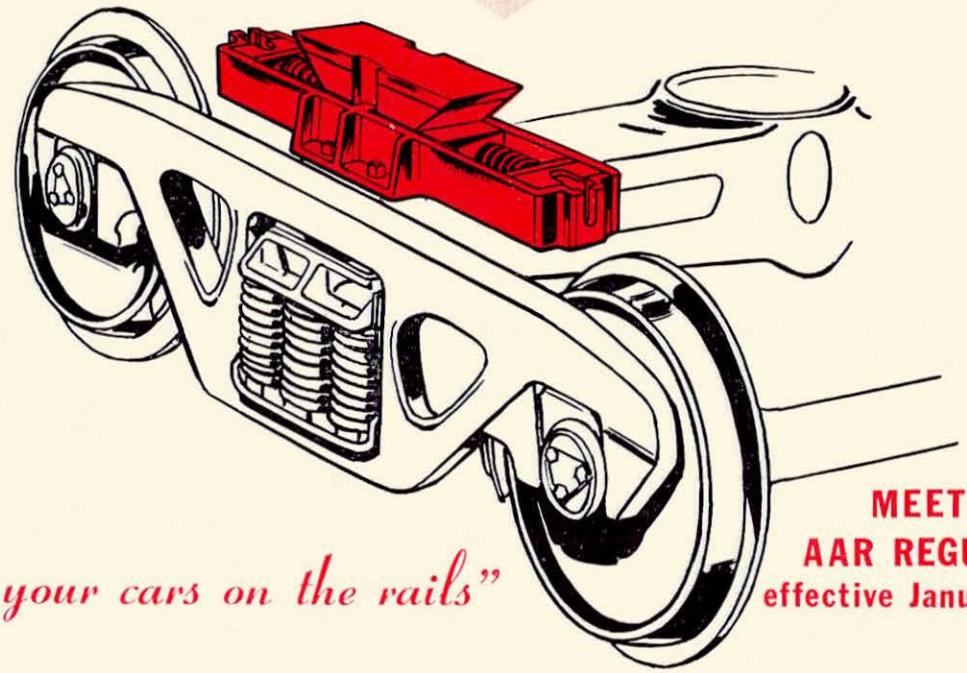
The Switch Point Guard Rail is a 4-ft-9-in. length of heat-treated guard rail which is mounted outside the high-side stock rail. Because its head stands higher than that of the running rail, the guard eases wheel flanges away from the point in the same manner as a self-guarded frog. The guard rail is fully heat-treated for long life in tough service.

Bethlehem's Switch Point Guard Rail has been recently improved to permit easy replacement of the guarding section without disturbing the switch slide plates. Folder 2198 describes it in full detail; we'll be glad to send you a copy. Bethlehem Steel Corporation, Bethlehem, Pa.

BETHLEHEM STEEL

BETHLEHEM STEEL

UNITY'S answer to Rock 'n' Roll



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. . . and here's our "New Addition"
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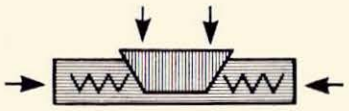
UNITY NO SWAY® SIDE BEARING STABILIZER

A new concept in Sway Control



- No modification required • Replaces standard side bearings.
- Longer life to cars & trucks made possible by friction wedges dissipating energy.
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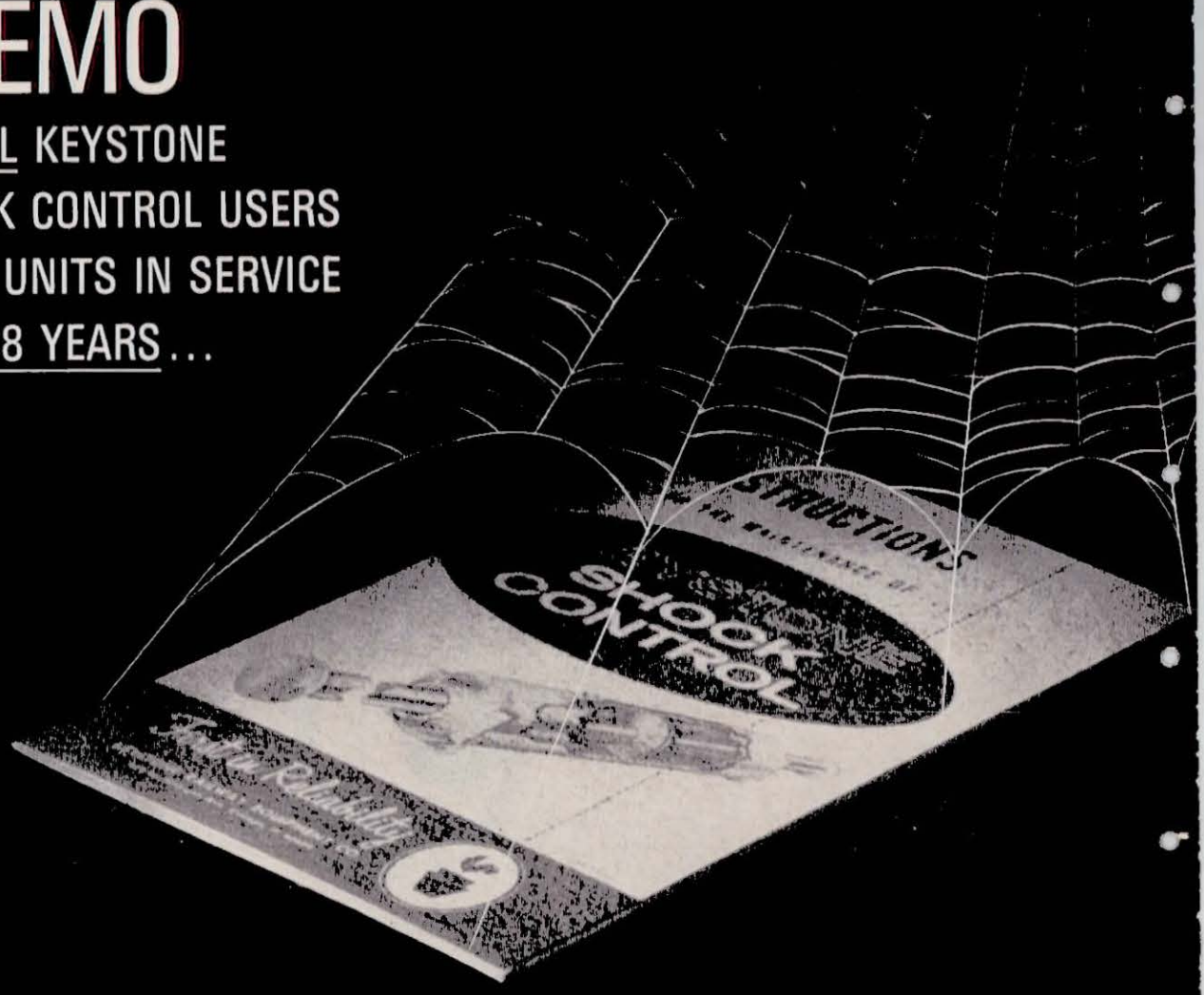
MEMO

TO ALL KEYSTONE SHOCK CONTROL USERS WITH UNITS IN SERVICE OVER 8 YEARS...



In case you're wondering if or when the Keystone SHOCK CONTROL Unit will have to be returned to the factory for maintenance or repairs, FORGET IT!

The KEYSTONE SHOCK CONTROL Unit will outlast the life of the freight car in which it is installed *without any repair other than seal replacement.*

Seals, we know from experience, will last at least nine years. A set of seals costs $22.50. One man can install them in a unit in approximately 30 minutes.

Many competitive type devices require a return to the factory. *Shipping charges alone for this return will exceed the cost of Keystone seals and replacement procedure.*

Let a Keystone Sales Representative show you what these savings can mean to you over the lifetime of your freight cars.

KEYSTONE RAILWAY EQUIPMENT COMPANY

General Offices: 310 S. Michigan Avenue • Chicago, Illinois 60604
Manufacturing: Camp Hill, Pennsylvania 17011

Sales Offices: San Francisco, California • Chicago, Illinois • St. Paul, Minnesota • St. Louis, Missouri • Omaha, Nebraska
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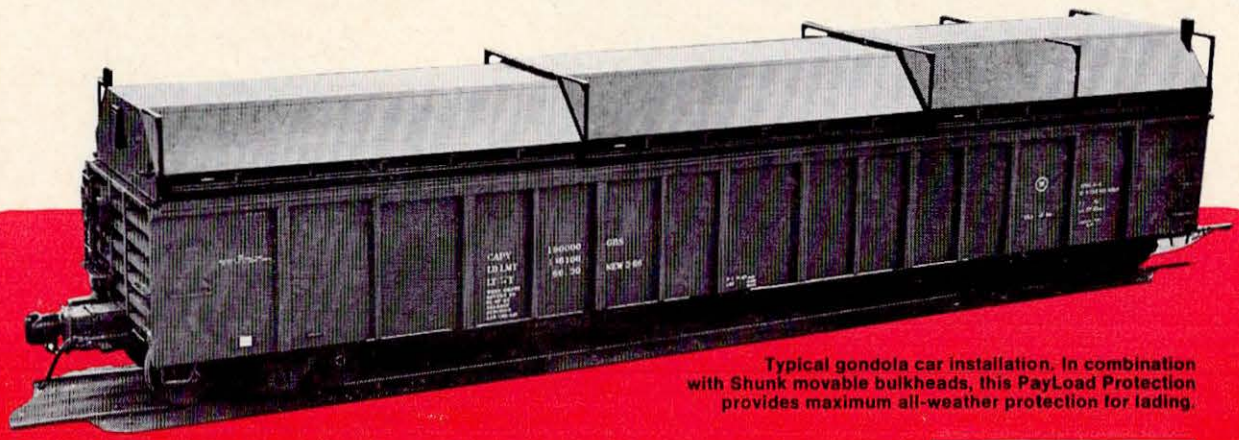
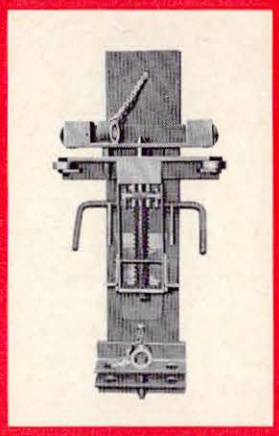
TELESCOPING
Three-Section
CAR COVERS



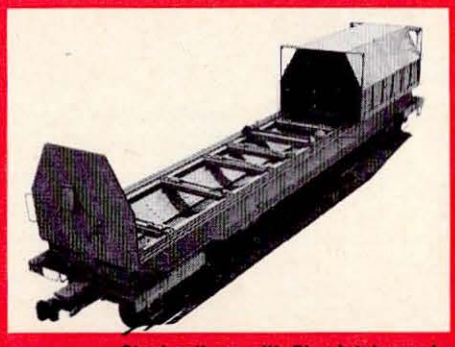
Typical gondola car installation. In combination with Shunk movable bulkheads, this PayLoad Protection provides maximum all-weather protection for lading.

Greater, Easier-to-Use PayLoad Protection from SHUNK

- Cover never removed from car
- Uncover two-thirds of car for easy loading, unloading
- Cover sections nest inside each other
- Easy manual operation with roller bearing rollers
- Weathertight cover over entire car
- Locking devices secure sections in closed position
- Convenient inspection doors
- Models available for flat cars and coil cars



Patent pending Shunk SafeLock AUTOMATICALLY snaps safety pins into locking rail when bulkhead moves as little as one inch. It remembers when people forget.



Steel coil car with Shunk telescopic cover; also available for flat cars.

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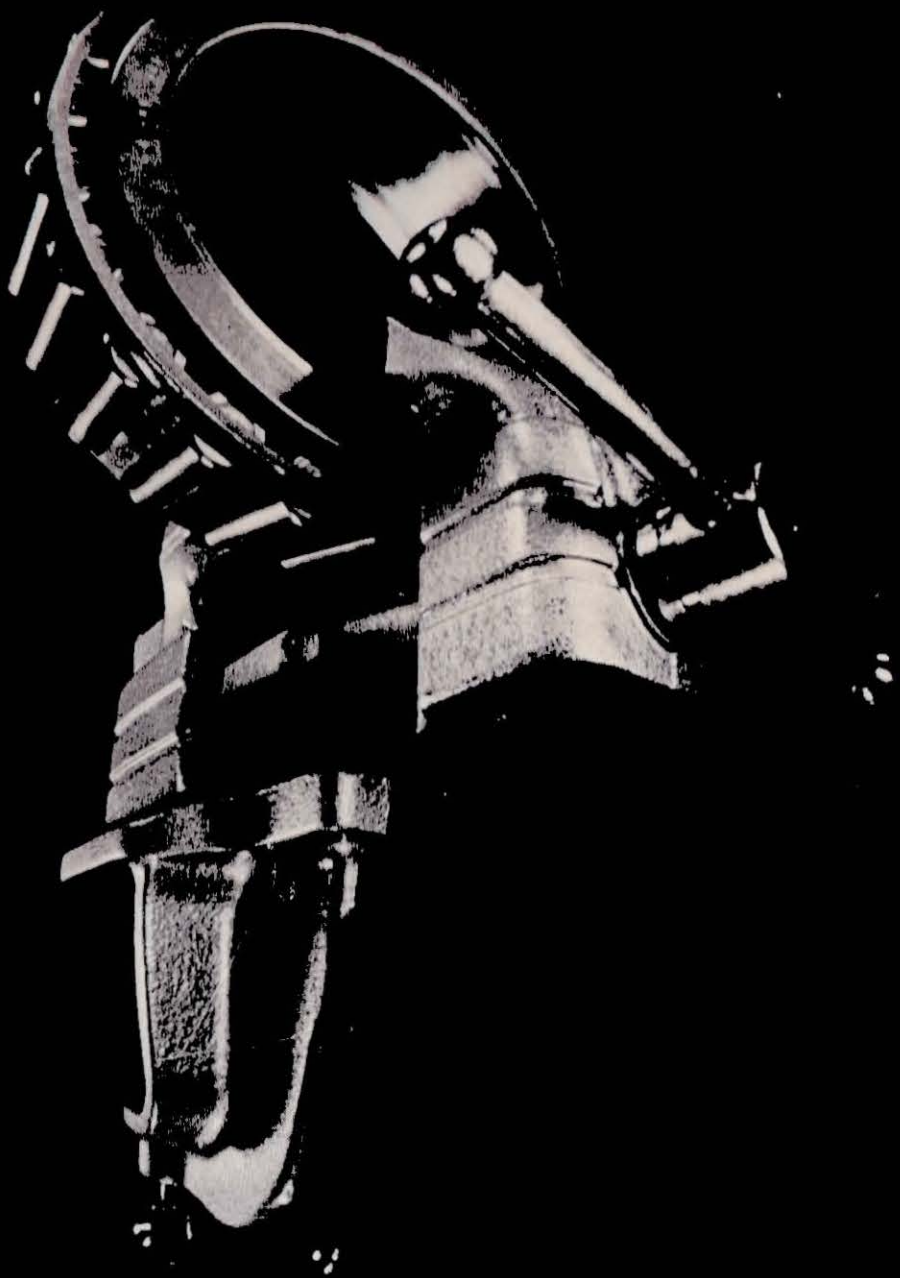

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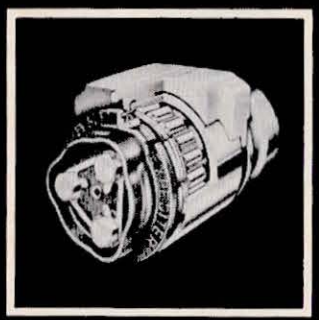
Get freedom from lateral checking with SKF cylindricals.



We solve your lateral checking problems at the factory. When you mount SKF® "Expediter"® cylindrical roller bearings, lateral play is not affected. There's no requirement for close-tolerance spacers. Or dial gauges. No mounting and remounting. What's more, SKF cylindricals disassemble completely for easy inspection and economical replacement of individual parts. And bearing life is 20% longer. Ask your Abex representative. Or write for our "Expediter" booklet to:

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Railroad Products Division

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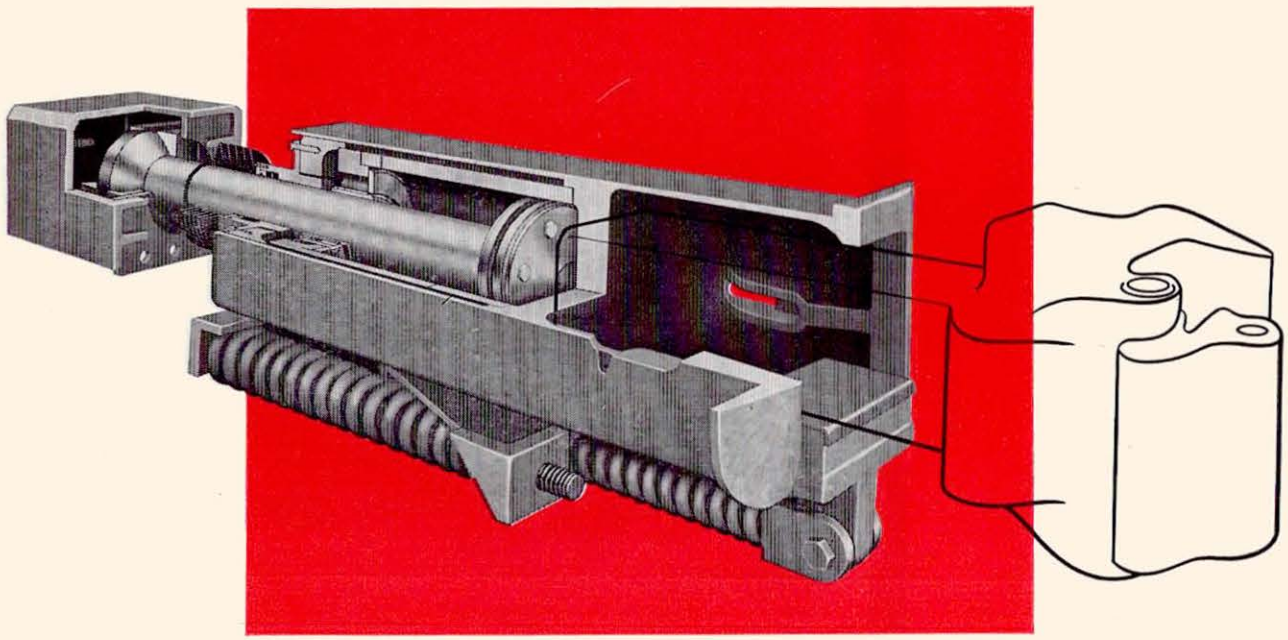
FreightMaster's New Concept Type HD Unit– highest capacity performance, retains center filler, yet doesn't add tons of extra weight!



Forget your idea that high capacity cushioning devices must add thousands of dead weight pounds and weaken the car structure. FreightMaster's new Type HD Unit's cushioning performance can match or exceed sliding sill devices without robbing your car of valuable lading capacity.

You keep the structural integrity of the car design with the Type HD Unit, too. The bolster center filler is retained to help you avoid the problems of broken bolsters, cracked center plates and other failures that often plague other designs which eliminate the bolster center filler.

FreightMaster's Type HD Units operate with a full 15″ stroke at each end of the car. Installation is virtually a "slide-in" procedure for both E and F couplers. Over 25,000 cars on 50 railroads are rolling proof that the basic FreightMaster design used on the HD Unit pays off with better protection for both cars and cargo.

Your FreightMaster Sales Engineer has the complete details on the big performance of the Type HD Unit. Or write us. You owe it to yourself and your company to compare the many advanced features that the Type HD Unit offers.

Here's how the Type HD Unit performs under AAR M921-65 conditions

In striking car tests, the Type HD Unit achieved 13 mph at 500,000 lbs coupler force, and in the squeeze test, where over 50% of impacts occur, the 14 mph requirement was attained with only 570,000 lbs coupler force — less than half the maximum allowable 1,250,000 lbs.

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REALCO operates the world's largest piggyback fleet—over 12,000 units—and as a leading purchaser, draws fully on the engineering resources of foremost builders. And, because REALCO is the only organization of its kind that assumes responsibility for maintaining and servicing its fleet, we're able to create and build in standardized features we know will minimize failure, absorb abuse and vastly reduce down time.

Thus you find a unique array of trouble-preventing features in REALCO trailers. Items like 10′ lift pads; heavy duty landing gear; load holding devices; full lining and recessed fastenings, to name a few.

They're efficient trailers . . . and good looking, too . . . because they carry member identity on large, brilliant reflective signs. Result is design, performance, and appearance equal to the diversified needs of members.

REALCO invests in quality equipment and provides the services to keep it that way. The fact is, in per diem piggyback, REALCO invariably delivers the best . . . yet more economically than anyone else. Why settle for less? Contact REALCO:

REALCO®

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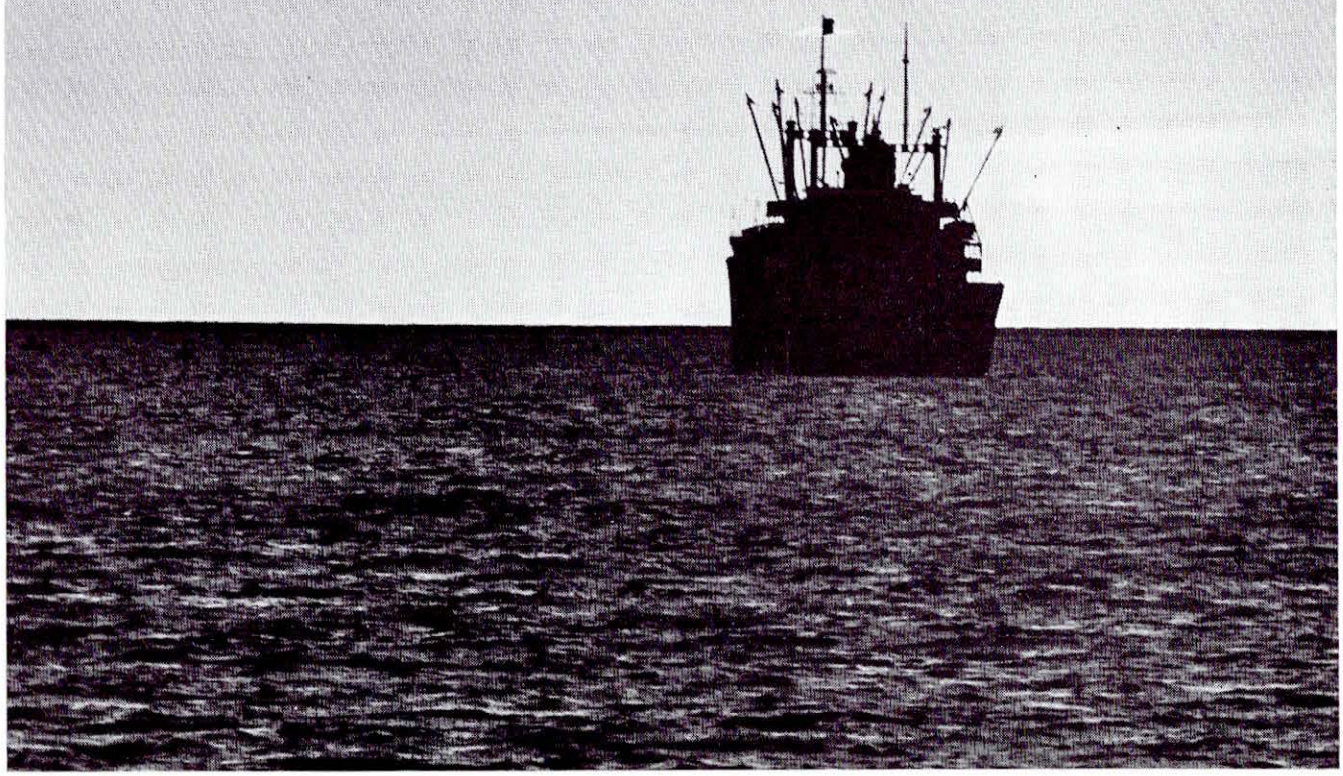
Get on the Fast Track

THE MILWAUKEE ROAD



Why do cars built with Cor-Ten Steel stay in service far longer than ordinary cars?

USS COR-TEN High-Strength Low-Alloy Steel not only has extraordinary resistance to atmospheric corrosion and normally holds paint up to twice as long as carbon steel, but also is 40% stronger than regular carbon steel. It gives cars the stamina to withstand continuous punishment and to set records for uninterrupted service.

USS COR-TEN Steel can be used (1) in the same thicknesses as carbon steel to provide much greater strength and far longer service life with the same payload, (2) in thinner sections to provide equal strength and service life with a maximum reduction in weight and increase in payloads of several thousand pounds per car, or (3) in

intermediate thicknesses to provide, at the same time, a lesser but worthwhile increase in strength, payload and service life.

USS TRI-TEN Steel, another relatively low-cost weight reducer, has excellent resistance to fatigue. USS EX-TEN Steel's favorable strength-to-cost ratio makes it the biggest carbuilding bargain around. For especially rough impact/abrasion applications, use USS "T-1" Steels.

These special steels can increase the life and efficiency of the next freight cars you buy or lease. For more information, write United States Steel, P.O. Box 86 (USS 5263), Pittsburgh, Pennsylvania 15230.

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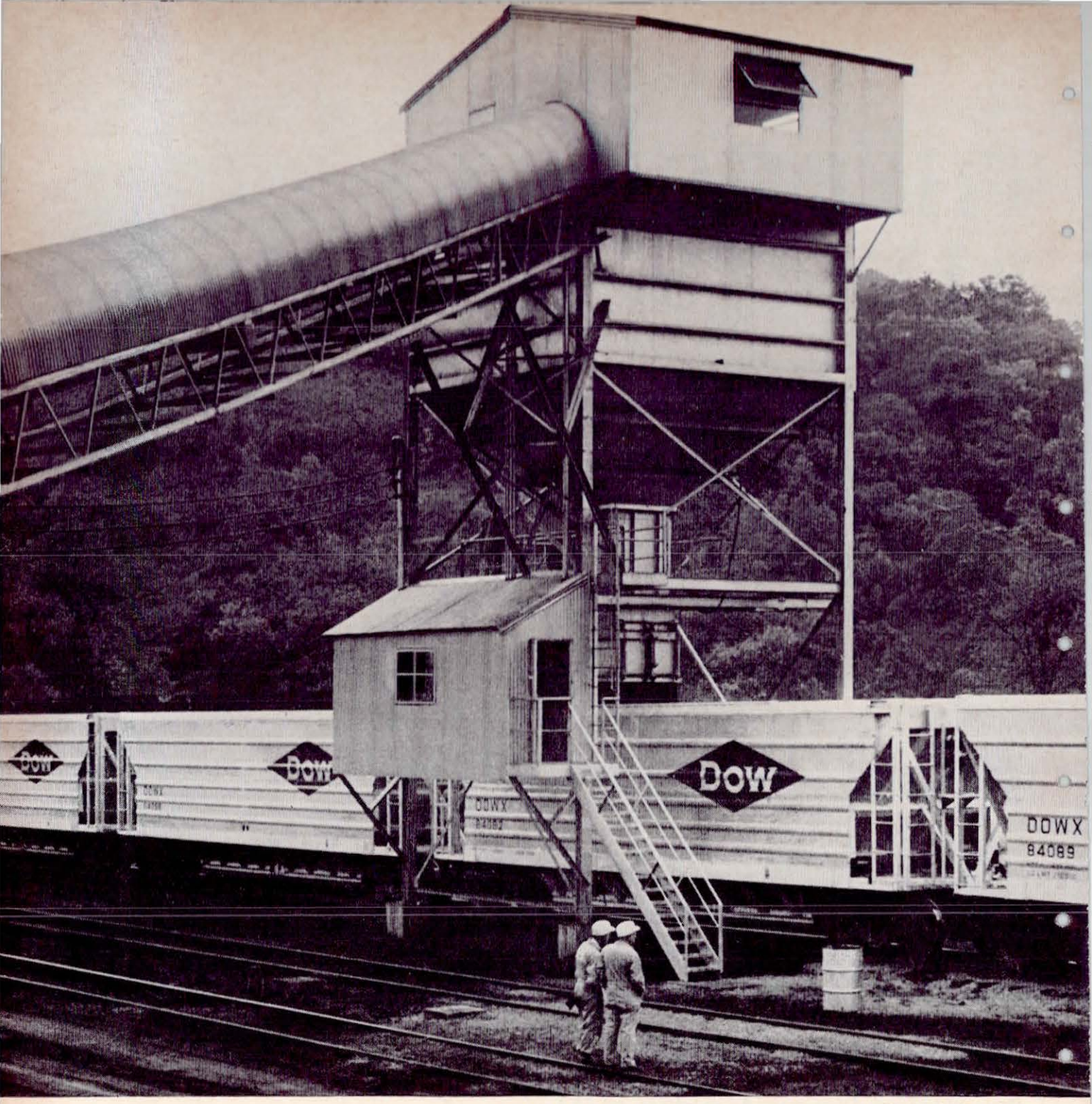
USS United States Steel



Metal Products Department, The Dow Chemical Company, Midland, Michigan 48640.

From here on the cost of coal starts coming down.
Just write for our brochure. It describes a new concept in the planning of aluminum integral trains which could result in more profitable long-term contracts with your big coal customers. It's worth reading. Write.

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intermediate thicknesses to provide, at the same time, a lesser but worthwhile increase in strength, payload and service life.

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USS United States Steel

In 1818, when Henry Villard, Northern Pacific Railroad president, heard of his employee Conductor Clark being intimidated by ruffians he exclaimed, "Confound it, that's no way to run a railroad!"
The American West, Lucius Beebe and Charles Clegg

"But we don't need aluminum hoppers!"

On the other hand, perhaps you do. Working with your own people, our Railroad Consulting Team can determine whether or not aluminum equipment is practical for your operation. These knowledgeable men are amazingly fast, efficient and objective . . . they examine the alternatives from your point of view.

They use a specially designed computer program based on actual railroad case studies to analyze the economics of equipment for specific runs. They have proven know-how on financing equipment under various conditions. They have complete technical data on aluminum's performance in-service. And they have ideas on marketing that stem from a remarkably intimate knowledge of cost-cutting avenues for the shipper.

If aluminum equipment is not for you, the Kaiser Aluminum team will tell you so. Honestly, isn't that the way you like to do business, particularly with one of the world's largest producers of aluminum?

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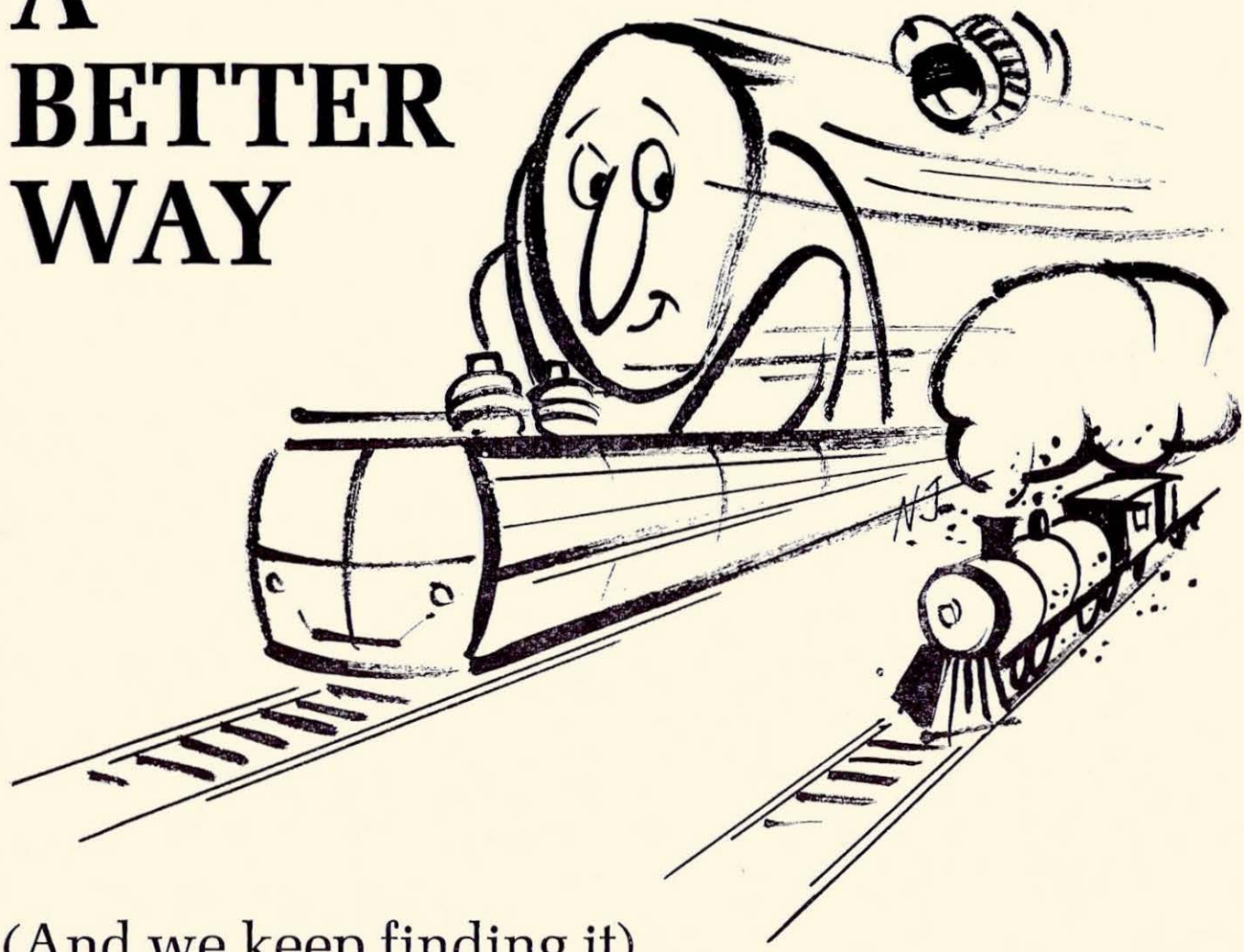

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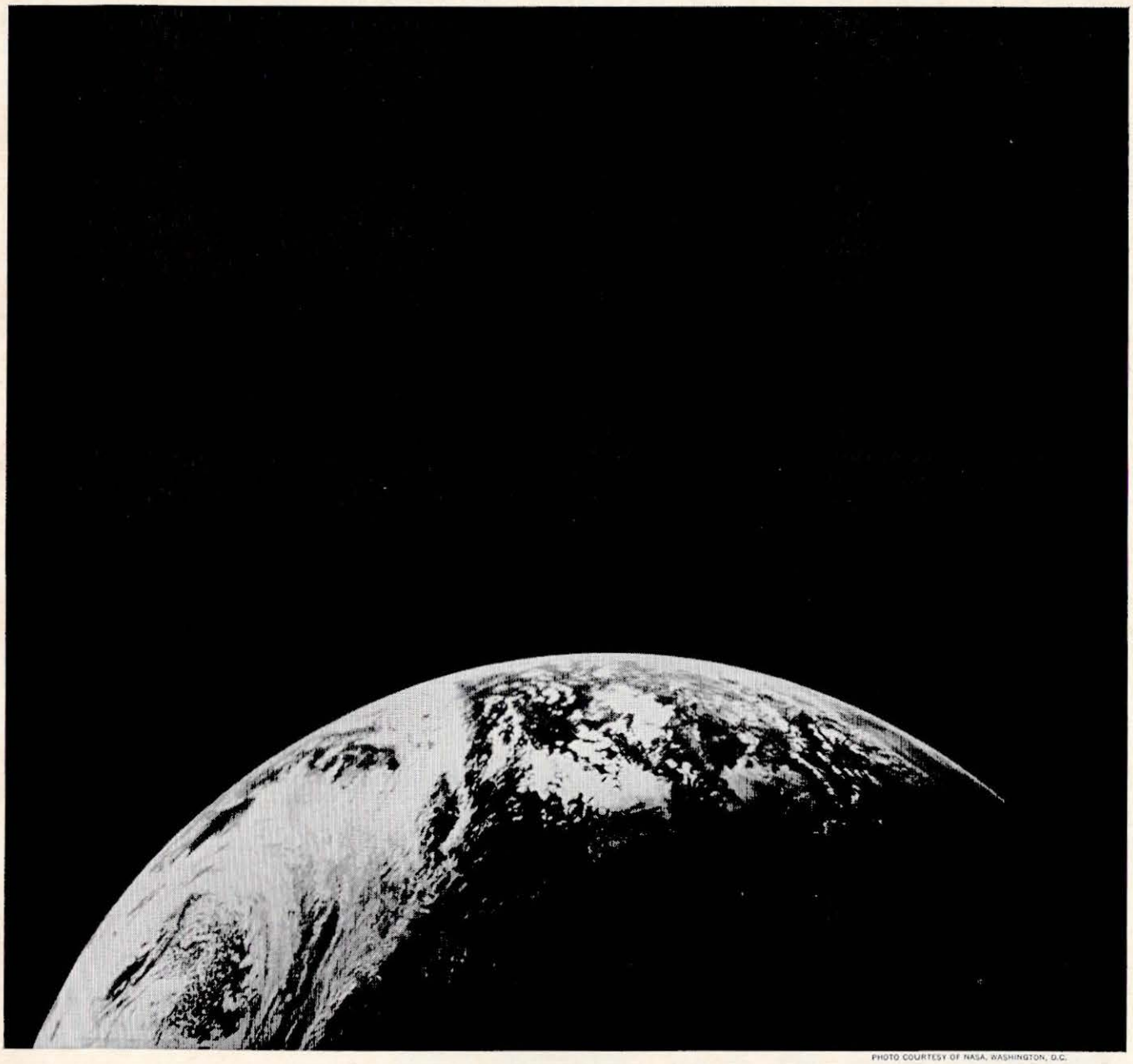

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C&NW'S STRATEGY IN THE WAR ON L&D

Prevent Mechanical Failure

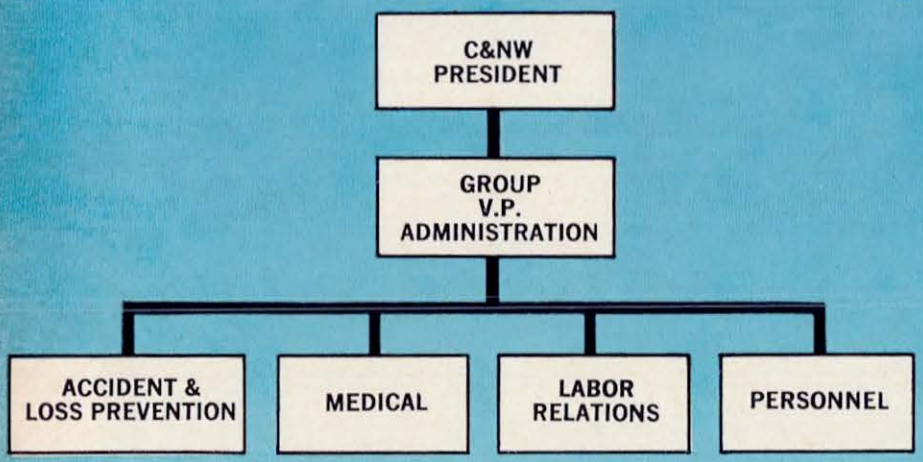
Improve

Reduce Human Error

Continue Research

How the C&NW cuts casualty

Organization for action: The group...



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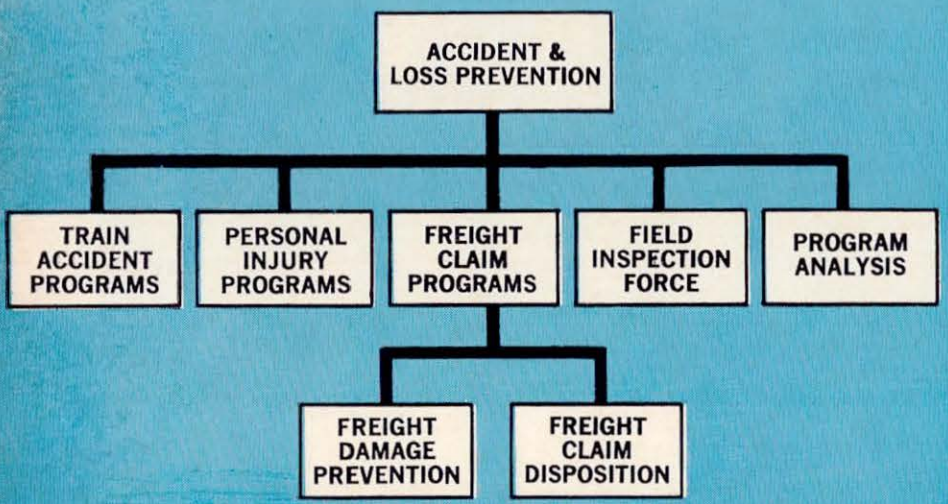


By GUS WELTY

Shut off the dollar-drain of train-accident costs, personal-injury claims and freight loss-and-damage claims, and any railroad in the country would be in far healthier shape. That's the theory which Chicago & North Western is trying to put into practice—and the results already are impressive.

In a unified program of train-accident analysis-plus-action, North Western last year:

—Cut train-accident costs by more than one-third.

—Practically eliminated human error as a significant cause of major accidents.

—Sliced about $1 million from the total cost of accidents attributable to mechanical failure.

● **Putting it all together.** Then came a consolidation. Late in '67, President Larry S. Provo established the road's uniquely-named Accident and Loss Prevention Department. He's expecting even deeper cuts in C&NW's casualty-loss bill, as A&LP people are also moving in on the other two major areas of loss, freight-loss-and-damage claims and personal-injury claims.

The whole program began little more than a year ago, with a directive straight from Chairman Ben W. Heineman. Top management had added up the bill for 1966 losses— and neither the totals nor the trends looked good.

In particular, train-accident costs stood out. They represented the largest single area of economic drain in terms of actual dollars. And, C&NW found, in 1966 costs per accident were running double what they were just five years earlier.

Fixed Plant on Safety losses

The assignment to develop the plan to plug the leak went to a young staff officer on the chairman's corporate development staff, Victor L. Preisser. And things rather quickly started happening.

The primary concern was economic —and analyses of five-year accident data began to point to certain moves North Western could and should make to concentrate effort where it would do the most good:

—A system-map plot of accident occurrences, labeled with cost figures, showed that C&NW was really two railroads. From an accident-cost standpoint, 20% of the mileage was carrying 80% of the traffic and accounting for about 90% of the major-accident losses.

—Study of accident causes showed certain shifts, over the 1962-66 period. For the five years, mechanical failures were listed as causes accounting for almost half of the total dollar loss in major accidents. Human error was blamed for 27% of the loss, track failure for 18%. But for 1966 taken alone, the three major causes were bunched, all at about 30%, plus or minus.

—Comparison of North Western accident statistics with those of other roads produced little to cheer about. C&NW was far from being the worst performer in western territory, but it also didn't rank with the best.

● **Work to be done.** Victor Preisser sums up the situation of a year ago: "By any measurement, by any reckoning based on public data or our own private information, there was room for improvement."

North Western set the stage for action by calling about 80 top field officers into Chicago for a meeting. Ben Heineman personally laid it on the line: C&NW was embarking on a train-accident loss-reduction program—and it meant business.

It was, Preisser muses, an old situation: "There we were, a Harriman Safety Award winner for the previous year. And there we were, knowing that we had to bring about substantial improvement."

Top management representatives from the operating and engineering departments were polled, on a division-by-division basis, for ideas on what might be done. Repies came pouring into Chicago. A few were impossible dreams: "We just couldn't relay the entire railroad with 132-pound rail." Others were rooted in practical operation: "One engineer suggested that he could get a real jump on track-maintenance if we could just get his cross-tie suplies to him two months earlier." All replies were analyzed on a cost/effectiveness basis.

What evolved was essentially a three-part program aimed at the major accident causes, with immediate emphasis on the human and mechanical factors. North Western's reasoning: The human-error area offers the best possibilities for quick improvement; the mechanical area ranks next; and the fixed-plant area comes in third, because of the time problems as well as the dollar problems involved in extensive roadway upgrading.

● **The gains came quickly.** Based on results, the choices were wise. Human failure as an accident cause dropped from its 32% ranking in 1966 to just 6% last year. Mechanical failures alone, responsible for 33% of the dollar loss in '66, were trimmed to 31%, for a net improvement of more than $1 million.

In the human-engineering area, North Western made its greatest gains —with a few novel approaches. Assistant Vice President and General Manager J. W. Alsop sums it up: "First, we made sure our people had the equipment they needed. Then we stressed education in proper operation and proper use of the equipment. Finally, we enforce hell out of safety regulations. The rules will be adhered to—and our people know there will be discipline when variances are found."

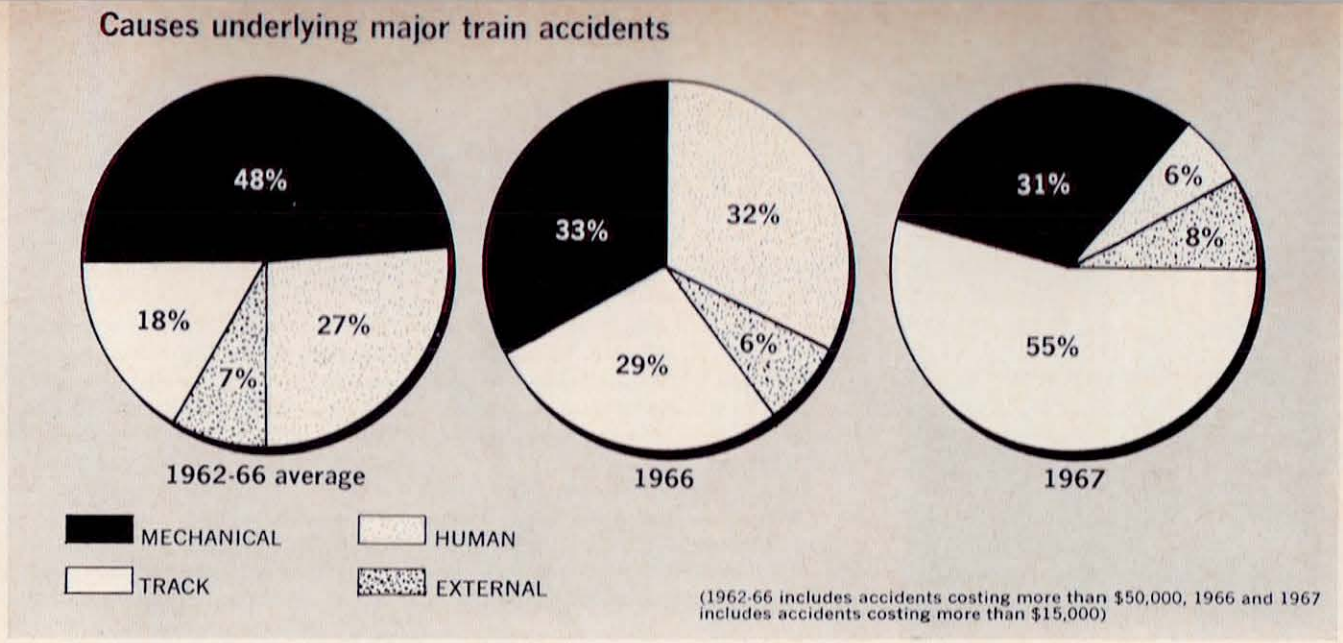
In the matter of rules education alone, the record glistens. North Western adopted a new kind of rules class and a new kind of rules examination. Instructional emphasis was on understanding and application, not on rules-recitation. Rules tests were revised, as Preisser puts it, "to remove cultural and educational and personal bias."

Former rules exams involved about 200 questions, they required several hours in the taking and a couple of hours in the grading. The new test holds just 50 problem situations—multiple-choice questions in which the employee must pick the best solution to a specific operating problem. Answer sheets are sent to Chicago, for machine-grading.

In 90 days last spring, C&NW instructed, tested and qualified some 6,000 employees on the new Consolidated Code of Operating Rules, which went into effect June 1. Since then, says Lloyd Rogers, superintendent of rules, "there has been not one serious accident which could be attributed to a man's not knowing the rule, or mis-interpreting it, or mis-applying it."

No safety program is effective without an audit, however, and North Western's accident-prevention people are running a carefully-audited operation. Field efficiency tests are being run all over the railroad, at a rate of about 300 a month. Eight-channel Barco recorders are used on all new locomotive units and on some older ones, to provide capabilities for measuring both power and crew performance. Radar equipment has been acquired to aid in field train-speed checks. And line supervision has been made well aware that, on North Western, no other single factor outranks safety performance on the list of criteria for promotion.

● **Inspections tightened.** In the main, North Western approached the mechanical problem in more predictable fashion. Hotbox detector locations were checked and the decision was made to install an additional 10 units. C&NW also found that broken-wheel and dragging-equipment detectors could be installed at little extra cost, making use of hotbox detector circuitry. W. J. Weatherall, general superintendent-car department, tightened up freight-car inspection practices, with emphasis on old equipment—which his figures showed to have a frequency-of-failure out of proportion to use on North Western rails. Car inspectors were put on where none had been stationed before, and they're credited with preventing a number of derailments by catch-



ing defective equipment coming on-line.

Finally, certain types of rolling stock were held out of the consists of certain high-speed through trains, and position-in-train standards were set and enforced for certain other types of cars.

In the fixed-property area, third of the major targets, North Western has had to move more slowly. But improvements have been concentrated in those areas where they would do the most good—those parts of the railroad with the heaviest concentration of traffic and the worst record in train-accident dollar losses, plus, of course, any other stretch of track which carries passenger service or particularly high-value freight, or where a derailment would tie up interchange or city vehicular traffic.

North Western monitored the train-accident program carefully as it evolved during 1967. Month by month, the approach looked better and better. By the end of the year, C&NW could point to a reduction of several million dollars in train-accident losses.

● **Bringing it all to a focus.** Even before the final figures were in, Heineman and Provo called for a permanent program which would encompass all areas of injuries, accidents and losses. After careful study, it was decided this area was closely allied to personnel, medical and labor relations. And all these functions were then coordinated into one new department under direction of a vice president—personnel. His first move: To ask Preisser, who had been doing much of the development work, to serve as assistant vice president in charge of the newly-formed Accident and Loss Prevention Department.

The new organization was consolidated principally from existing operations within various other departments —train-accident and freight-claim-prevention people from the operating department, personal-injury people from the safety department, claim-payment people from the accounting department, field inspection forces from several sources, including the ranks of the special agents. The emphasis was on expertise—and C&NW appears to have it. The manager of personal-injury programs, for example, is K. L. Patrick. Until last year, he was director of ground/missile/nuclear safety, U. S. Air Defense Command, at Colorado Springs.

And because loss-control problems are fundamentally dependent upon people, A&P was set up, from an organizational standpoint, parallel with the labor-relations, personnel and medi-

C&NW's program has saved millions

To a degree, Chicago & North Western regards the first-year results of its train-accident prevention program as a failure: It did not quite meet the tough set of goals established. At the same time, C&NW takes a quiet pride in several millions of dollars in savings resulting from what's termed "one of the most modern and efficient such programs in operation on any railroad in the country today."

North Western President Larry S. Provo sums up the operation this way:

"The savings made in 1967 have not been achieved without a substantial and continuing investment on the part of the railway in men, materials and redirected effort on the part of supervisory personnel. A system of management controls that monitors and evaluates the program has been installed. It was established from the very beginning that a viable program must be one that is permanent, self-sustaining, and with the necessary controls to allow a continuing evaluation of its effectiveness."

Employee attitudes have been substantially altered, C&NW people say, partially as a result of management's commitment to improvement, in terms of accident-free train performance, and partially due to the more obvious changes that are demonstrated by new equipment; improved instruction, engineering and enforcement of the rules; and the creation of the new A&LP department to monitor and control the railroad's entire casualty-loss program.

cal departments, reporting through the vice president-personnel.

Also deeply and directly concerned with the program is C&NW's law department. As General Solicitor R. W. Russell puts it, "When all of us think continuously in terms of safety, the meaningful results we hope for will be accomplished. In that regard, there's every reason that the employees and the company will receive the benefits of a reduction in injuries and accidents and, of course, in their causes."

● **Target: 1968.** What's C&NW have in mind for '68? Further improvement in the train-accident record, and a healthy start on freight-loss-and-damage prevention and on personal-injury prevention. The aim is to maximize profits, not merely to minimize casualty losses. The procedure is a systematic one: "We're peeling layer after layer off the problem—getting control step by step."

In '68, for instance, another layer will hopefully be ripped off the train-accident program. Dollar losses had to be the main concern in the beginning. But now, more attention can be paid to prevention of all accidents, not just the potentially-high-cost ones. Field efficiency testing will be stepped up, with a mobile field force acting as continuous monitor of the degree of adherence to accident-and-loss-prevention programs. Rules review and testing programs will be set up on an annual basis under the new system. North Western, along with three other western roads, will continue working with an educational organization in Chicago on a programmed rules instruction system.

Meanwhile, the search continues for new approaches to the problem of getting men and machines to work more safely together. One example: Man/-machine audits. The hotbox detector is a marvelous device—but there's still a human link needed between detection and action, to prevent a derailment. So, as a means of checking both on the detectors and on the employees responsible for acting on detector indications, C&NW developed a hotbox simulator —a simple device attached by magnets to the journal box. The simulator trips the scanner as the car passes it, the indication goes onto the detector read-out sheet. And the railroad has an audit on machine and man—whether the machine functioned properly, whether the man acted according to instructions. Is the effort worthwhile? The record says it is. From the recent past, A&LP people can cite historical instances where derailments resulted from the kind of human error the hotbox simulator is designed to detect. In three cases, the hotbox detector indicated the presence of an overheated journal but the individual reading the tape took no action; in a fourth case, a dispatcher stopped the train but the crew couldn't find the hot journal.

● **Using technology.** North Western isn't running a "big brother's watching" type of operation. What it is running is a program dedicated to safety improvement and improved control of casualty losses. A&LP works as a kind of loss-reduction profit center. If recorders or simulators or radar or other types of performance-measuring instruments will help, they'll be used. Right now, in fact, North Western is even making use of portable video cameras and recorders in the field.

The emphasis is across-the-board. It's not directed at the rank-and-file or at supervision, but at both. And, in case any challenge might be aimed at the extent of supervision's responsibilities, the challengers might consider the road's surprise-inspection operation—a maximum-security kind of thing in which a group of Chicago-based officers known as an operation status team takes off in the company aircraft for a destination made known only after the plane is in the air. Upon arrival at the selected inspection station, the general-office people—all specialists in a particular area—go to work on a review of operations. They complete the job over an eight-hour period, they return to Chicago, and they submit a so-called "deficiency" report to the general manager's office. The report goes back to the field—and within 48 hours the division superintendent must file a program of improvement, addressed to each specific item on the deficiency list.

● **A measure of proof.** The operating and engineering department continue to play a vital part in the dramatic change in the train-accident picture: "We've only been a catalyst for ideas that were being developed all along," Preisser says. He also declines to make predictions: "With the lading, equipment, train sizes and speeds we have today, it doesn't take more than a couple of bad ones to blunt a good record."

Still, a group of outsiders with a lot of knowledge and a big stake in the railroad's operations have put their approval stamp on the program and its results, in a meaningful, dollars-and-cents way. Railroad insurers, like insurance underwriters everywhere, are a hard-headed, practical lot. Not so long ago, even though C&NW had just won a Harriman award, the insurers were looking at the railroad with lessening enthusiasm. Then, the accident-prevention program began producing results. The thinking of the insurers turned around. North Western still has its insurance. And the A&LP program has another set of backers. ■

Can new tariffs cut damage to perishable commodities?

One way to cut damage to farm perishables in rail transport is to overhaul tariffs for packaging such commodities. This is the proposal of F. W. Parilla, special representative for the container section of the Uniform Classification Committee, the railroads' tariff drafter. Parilla made the proposal during a last-day session of the 22nd Annual Conference on Handling Perishable Agricultural Commodities at Purdue University, March 18-21.

Speaking at a packaging-concepts session, Parilla referred to Freight Container Tariffs 1-H, 2-G, 4-C, and SFA Container and Loading Rules Tariff 823-D (ICC's 41, 39, 40 and 119, respectively). Provisions in these tariffs for containers, loading and bracing were set several years ago after field tests in the standard bunker ice car, and they aren't adequate now, Parilla said: "The use of larger-size mechanical cars, involving greater load heights and lengths without corresponding adjustments in container specifications and loading methods, can only increase the container damage potential."

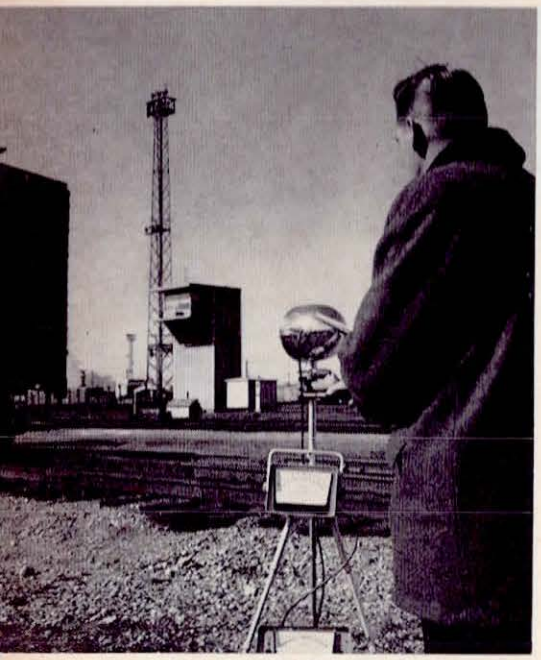
Another reason for the proposed change is the growth in TOFC traffic, Parilla said. Tariffs, are needed for proper loading and bracing of perishables-packages in trailers and vans. Other causes of "container abuse" are: overpacking, underpacking, inadequate or improper flap closure, bad handling at origin points, over-gapping of flaps, and ventilation slots that weaken packages because they are too big or too-many.

Parilla said growth in the use of pallets will mean less perishables-container damage because handling of individual units will be reduced during the loading and unloading. But standard pallet sizes will be needed to insure proper bracing, he aded.

What about plastic packages for perishables? C. J. Snyder, Sinclair-Koppers vice president, said they'll cut damage substantially because of favorable characteristics in foam plastics and, especially, in polystyrene. These are light weight, adequate strength, waterproof quality, resistance to fungus and mildew, and adaptability to unitization.

CAMERAS ARE A BIG HELP

A big weapon in the anti-L&D battle is the camera. Here, a CB&Q agent photographs



RADAR HELPS, TOO

Another type of camera on the L&D-prevention scene is the radar device. It's being used here by a Milwaukee inspector to check the speed of a box car coming off the hump in the road's Bensenville, Ill., automatic classification yard.

ONE ROAD'S APPROACH

The Illinois Central's attack on the loss and damage problem is based on an organizational change. It involved formation of a new department: the computer-equipped Investigation and Control Division. The new group is under the joint direction of Louis B. Marzoni and Donald L. Wood. Marzoni handles the L&D-prevention office staff, and Wood directs the field investigating force.

THE WAR ON L&D

Loading methods are getting

By FRANK MALONE

Something's catching on in the field of loss and damage prevention. It's a broader-based shift of attack from the in-transit phase of rail transport to the loading and unloading phases. And it's carried out with the shipper clearly in mind.

This shift of battle-plan involves deploying numbers of special agents equipped with cameras right into the zone that more railroads are starting to consider the most dangerous—the loading area. There, the agents watch, note, and shutter-click. They produce reports that show shippers there's a lot more behind damaged cargoes than railroads' rough handling.

• **Payout up in 1967.** This intensified campaign should have come sooner. Although it got off to a strong start on a number of railroads in 1967, it wasn't there in time to produce startling results for the industry generally. While rail traffic volume and revenue dropped during 1967, their payments for freight loss and damage continued to rise. According to estimates for U. S. Class I railroads, the total payout for 1967 approximated $168 million, compared to $158.4 million for 1966. That's a 6% rise in '67, over the 1966 figure.

However, there were exceptions to the over-all 1967 uptrend in L&D payout. Some roads can report substantial downtrends in claim payments; others can show a much smaller percentage of payout increase than the AAR general figure. But all but one of these exceptions can report the same basic reason for their reversal of the industry's L&D trends—a planned, well-manned concentration on the origin and destination segments of rail movement. And the same men who are helping change shippers' minds about where to look for the causes of damage are showing them something else. They're demonstrating to shippers that in most cases a small, inexpensive change in loading practices is all that's needed to prevent a big, expensive damage problem.

• **Santa Fe: Better handling all the way.** One of the first railroads to become engaged in this shipper-oriented prevention practice is Santa Fe. Several years ago, the railroad started re-shuffling its police and L&D prevention personnel into one group—the department now called Better Freight Handling and Special Services. It's taken a while to really get things moving, but Santa Fe is able to show for 1967 as great a drop in L&D payout as the railroads generally showed a rise. Santa Fe paid $9.9 million in claims during 1967, compared with $10.5 million in 1966—a 6% decrease. The total 1967 payout represented a 1.72% ratio to the year's gross revenue, while the comparable figure for railroads generally was 1.85%, according to the AAR.

In the number of claims filed, there was a 16% decrease from 188,000 in 1966 to 159,000 in 1967. And ATSF prevention people can report that 1968 is off to a good start, with a 9% drop in the number of claims filed during January in comparison with a year ago. The figure is 19,069 for January 1968, compared with 21,089 for January 1967, according to John L. Hastings, department manager. (The actual payout figure for January, reflecting various other factors, does show an increase in comparison with payout totals for January 1967.)

some cartons to record loading damage.

a sharp look

Behind this good showing is a prevention technique that Santa Fe's been polishing for several years—the dispatch of camera-toting agents to loading and unloading sites for filmed investigations that will be used as the basis of reports to shippers. Directed by Hastings and three superintendents, Santa Fe's 186 agents spend most of their working hours out on the line—theirs and somebody else's.

"This procedure is subject to general application for all-sized claims, both on-line and off-line. The agents take pictures that are used for presentations to traffic managers to show them that factors besides improper railroad handling may have caused the damage they're complaining about," Hastings says. All claims against the railroad get some attention, he adds, but particular interest is shown in steadily- or suddenly-rising claims of a particular shipper.

A good example of the camera-inspection technique is the case of an important Santa Fe customer, a paper-bag manufacturer who gives the railroad as much as a dozen carloads each day. The paper-bag company's own customers were getting tired of opening Santa Fe box cars and finding many of the paper-bag bundles spilled and split because they'd been jerked loose from the shipping pallets.

Shipments were being refused because of torn and contaminated bags. And claims were being filed not only for damaged merchandise but for the extra labor charges resulting from retrieval of the scattered shipments. The paper-bag company called Santa Fe, the railroad called Hastings, and he assigned a veteran agent, John L. Fox.

"It didn't take long to see that this was a simple loading problem that could be solved with two simple loading changes," Fox says.

The first change was to stop the practice of piling mixed sizes of bag-bundles on the same pallet. "With different-sized bundles, they just couldn't get them on the pallet and have a square load that would ride properly," Fox explains. So he persuaded the company to get its salesmen to sell enough of a particular-sized bag to fill at least one pallet. The idea was to sell same-sized bags in large-enough quantities so that all the bundles on one pallet would be the same size.

Fox's second discovery was that the pallets were too weak to withstand car vibration. The pallets were designed cheaply for one-trip use and then disposal. Fox showed the company how to make the pallets stronger with small extra cost—by the simple addition of a solid, pallet-sized board under the same skids that held the pallet's topside. (There was a third proposal for inserting fibreboard between pallet loads to prevent chafing of bundle edges.)

All this took place several months ago. What are the results? Fox puts it simply: "We haven't had another complaint."

● **Burlington: More cameras and a 17% decrease.** Although a little newer at the camera game, Burlington sent a force of film-makers into the prevention field last year to check undamaged as well as damaged cargo. They went on an at-random campaign and produced startling results. Burlington's payout for claims in 1967 shrank by 17%. The decrease was from $5.2 million in 1966 to $4.3 million in 1967. And this over-all payout figure wasn't far from the $1-million decrease projected a year ago by Mark Leininger, manager, security and freight claim prevention. For 1968, he's forecasting a decrease of $600,000, and says simply, "We'll make it." Early this year, he could show a 33% decrease, from $359,046 in January 1967 to $240,008 in January 1968.

His confidence is based on an impressive set of facts. Eighty special agents will be making 1,000 random inspections each month. They'll be supplying information for an 18- to 22-page monthly report on damage amounting to $100 or more for the entire railroad. This report itself is an indication of how the campaign is going: It averages about six pages less than at this time a year ago. Arranged according to division, station, shipper, commodity, date, car number, type of damage, cause and amount of damage, the report's known as the prevention "bible." It gives an instant view of the Burlington's loss-and-damage situation from every angle. From this information, Leininger can decide the next move of his agents. It's an intelligence report that guides the activity of the entire prevention force.

Along with Burlington's over-all improvement in the L&D area, there was a gigantic improvement regarding a specific, important source of revenue—plywood shipments. Burlington agents were able to cut the number of claims for plywood damage by 44% during 1967, to 1,747 from 2,509 in 1966. Dollar payout dropped 19%, to $107,914 in 1967 from $128,546 in 1966. Again, the results were due to a simple change in loading procedures suggested by railroad investigators.

Why is plywood so important? It ranked first in 1967 per-car revenue among all Burlington lumber and wood-products traffic, and it ranked ninth among general "Q" revenue sources.

The plywood problem drew special attention last November when the Southwest Oregon Shippers' Traffic Association, Inc., complained to plywood-hauling roads about increasing damage to their shipments. Involved was damage to corners, edges, sides and surfaces of plywood sheets of all types, from common plywood to pre-finished material. Burlington looked in at loading points and found that better blocking and bracing was needed. After viewing pictures of before-and-after loads, the plywood shippers agreed.

As Leininger puts it, "Our inspectors check the facts only. The facts tell their own story. It's a case of education. We're learning about loading and then showing the customer what we've learned. He then learns that there's more to damaged shipments than rough-handling by the railroad." And this is why Burlington is cutting the number of total-shipment refusals because of partial damage as well as cutting claims for damage.

● **Milwaukee: Radar reduces yard impacts.** While other roads were taking pictures at loading points, Milwaukee was shooting away in a slightly different area—the hump operation and its to-and-from points of movement. The railroad is getting ready to repeat tests using a radar technique that helped yard operators cut the number of over-speed impacts by almost 51% last year at Bensenville yard, near Chicago;

RADAR HAS PROVED TO BE A VERSATILE TOOL

borrowed from the highway patrol, the technique involves the use of a $1,200, two-suitcase-sized electronic watcher and timer to clock car speeds between points in the humping and other yard operations.

As soon as the weather's warm enough to allow yard personnel to stay outside for long periods of time, the radar device and others like it will return to work at the Bensenville hump yard and at other points. Over a six-month period in 1967, Milwaukee ran tests on nearly 15,000 cars a month at Bensenville and at other points in the Chicago terminal area. Similar tests were run at class yards at Milwaukee and St. Paul. The railroad tested car speeds, retarder effectiveness, the condition of classification tracks and the effects of track conditions on car rollability. The first 1968 radar project will be a repeat of those same tests—for a double-check on the 1967 findings. Then the radar will move on to tests aimed at determining how certain classification tracks ought to be changed for better car handling.

And those 1967 results? The most important was the 51% drop in the number of overspeed car impacts between June and October. Milwaukee calls any impact overspeed that's made at more than four miles an hour. At one time last year, 95% of all Bensenville's overspeed couplings were chargeable to hump operations, says R. J. Kemp, assistant to the vice president-operations. This was reduced to 22%. Kemp's chief responsibility is claim prevention. And he's sold on the radar idea: "Radar has proved to be a versatile tool for pinpointing the causes of damage in all aspects of car-handling."

Main goal of the testing, then, was to determine first the extent of overspeed impacting on cars handled over the hump, and subsequently to get cars moving down the hump into group tracks at five miles per hour—for the desired three-to-four-mile-per-hour coupling speed. Before radar testing was started, a number of couplings were made at speeds in excess of 4 mph.

In addition to the reduction in the number of overspeed impacts, there were these other important results:

—The number of cars that stalled before coupling was reduced by 69% during the study period. This is significant because "stalling and impacts follow a close line," Kemp says.

—The number of cars entering class tracks faster than the desired five miles per hour was reduced by 92.5% between June and October, without a slowdown in the operation.

—On some yard track curves, car rollability was improved by application of graphite to the rails.

—The curvature alignment and grading of some yard trackage was improved.

Again it was a matter of education. Kemp says that yard operators had little trouble realizing that changes in control were needed, once they saw the evidence supplied by the radar.

● **Reading: A change of philosophy pays off.** Reading's prevention results aren't as spectacular as those of some other railroads, but they're equally significant. Reading's 1968 prevention picture looks bright because the railroad already is starting to see the benefits of a change in prevention philosophy. The company's claims payout for January 1968 totalled $78,135, compared with $80,580 the year before, a 3% decrease. Reading's total 1967 payout was up from 1966, but at a 2.5% rise it still was considerably lower than the over-all railroad figure. The company paid out $715,323 in claims last year, compared with $697,546 in 1966.

That new prevention philosophy? E. T. DeWitt, manager of station operations and loading services, puts it like this: "Last year I thought talking to our own men was the best way. This year I've changed my mind. Now I feel that getting out and talking to the shipper is the best way."

Poor loading practices

Reading's own workers, however, aren't being neglected. The company's safety and freight-claims-prevention car still moves around the system for regular sessions with employees. But as DeWitt says, these aren't the men who are doing the loading. And poor loading practices now are what he considers a major cause of his problems.

DeWitt's conviction is supported by recent experience with one of Reading's major shippers. For just one of this shipper's products, the railroad handles a minimum of 5,000 cars a year—and pays about $150,000 in claims. "We're going to cut this by one-third in 1968," DeWitt says. He has strong reasons for his confidence because after several months of push-pull negotiation, his men finally are being allowed to inspect loadings at the shipper's door.

"We made recommendations. They didn't want to listen. We kept after them until they agreed to let my men watch their loading procedures. But still we couldn't take any pictures without getting clearance from the company. And for every one of my men on the loading site, they had five. But finally we were able to make our report. And soon after that, their traffic manager called me and said he wished we'd done it sooner," DeWitt says.

His over-all objective for 1968 is a 15% reduction in claims payout. DeWitt's force consists of three field men, one computer and a number of impact testers and cameras. He admits that it isn't much for Reading's 8,000 customers. But DeWitt has decided to be selective in his investigations. He'll watch shippers' records to spot a continuing claims trend or an unexpected rise in claims for one shipper. One thing he hopes to accomplish in 1968 is a wide expansion of L&D records arranged according to shipper. He wants everything transferred to electronic equipment so he can get "a completely computerized 1968 picture."

One problem he'll face will be claims for damage to trailer shipments. Reading carried 76,502 trailer loads last year, and paid $263,000 in claims for them. Another target will be contract loading used by customers. "The men they hire often don't care how they load cargo. This will have to be met by personal inspection," he says.

All in all, he's an optimist: "Shippers are doing a much better job loading cars than they were a couple years ago."

● **Illinois Central: A re-grouping for full attack.** For Illinois Central, 1968 will mark the move of an organizational change toward two main goals: (1) reduction by $500,000 of 1967's $5.5-million L&D payout figure, and (2) increase in the number of positive inspections of reported damage to 100% of those economically justifiable.

The organizational change consisted of a late-last-year combining of 150 men from claims-handling, loss-and-damage-prevention and salvage operations into a new computer-equipped force, the Investigation and Claim Control Division, under the joint direction of Louis B. Marzoni, freight-claim-prevention director, and D. L. Wood, investigation and claim-control director. Marzoni handles the professional L&D prevention office staff, and Wood directs the force of field investigators. And they all look for information from IC's new MAIN Central data-processing center in Chicago.

Illinois Central's 1967 L&D situation looked like this: $5,495,616 paid out in claims, compared with $5,466,867 in 1966; 58,826 claims filed against IC in 1967, compared with 63,615 in 1966. So the number of claims decreased substantially, and the rise in payout was small compared with the industry percentage.

"It'll take eight or nine months to get a satisfactory reflection of the new division's activity. But I think a $500,000-reduction in L&D payments this year is realistic," Marzoni says. He's also looking for a 10% reduction in the ratio of claim payout to gross revenue.

According to Wood, one of the greatest effects of the new setup is that, "We're going to get our people out inspecting fulltime." With the inspection goal for 1968, every claim of consequence will be covered.

Information gained from these inspections will be computerized so that an accurate picture is available in files arranged according to shipper, receiver and car number. The shipper's file will be maintained in Marzoni's office, and the receiver's in field district headquarters. And this gives a clear indication of the jurisdictions.

"Our people in the field are dealing directly with the customer. In the past, our men sometimes have gone out to talk to the shipper without a complete picture, and the shipper hasn't been too impressed. Now, our men can get full information on the shipper ahead of time," Wood says.

The third file is kept in the freight-claim agent's office in the accounting department. It holds reference to claims by trailer or car number.

"We feel that by using these three different systems of filing, we will have available an adequate cross-reference setup. If nothing is available by shipper, we can look under receiver or car number," Wood says.

Through this new statistical structure, Marzoni expects to find answers to questions such as these:

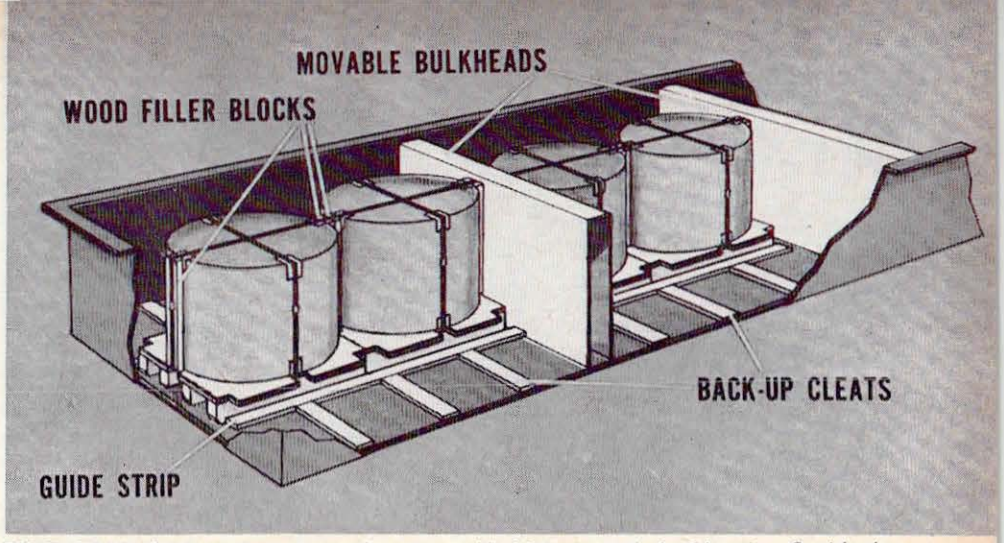
—Are we being truthful with ourselves in our approach to claim prevention? Are our claim-prevention devices doing the job they were designed to do?

—Are we realistic in our recognition of the mechanical, defective-car question, or of the adequacies of the type or condition of cars furnished for specific loading? How much money can we spend on upgrading equipment?

—Do our marketing practices reflect a consciousness of damage experience?

—What is the economic middle-ground between freight-claim expense and capital investment and maintenance costs?

One specific statistical result will be a new, claim-potential figure issued each month. It'll document monthly loss-and-damage experience according to commodity, shipper and receiver. And it'll give totals for each—number of experiences and amount of money involved. From this will be determined what Marzoni calls the total potential claim figure for subsequent months. And it "will lend direction to our prevention activity," he says. ■



RIGID LOAD finally adopted requires car with high-strength bulkheads. Cushioning is regarded as virtually essential if damage to tinplate is to be avoided.

THE WAR ON L&D

U.S. Steel wages its own battles against damage

There is more to the problem than claims against the railroads; an extensive study has shown what it takes to protect tinplate.

By FRED HOUSER

There is more to freight loss and damage than meets the eye—and comes out of the railroad pocketbook. U.S. Steel has its own designation, "the iceberg problem," for the more nebulous phases of the L&D phenomena. Railroad payouts (the $6.1 million for primary metal products in 1966 was 3.7% of all L&D payments) are far from the entire picture, as USS sees it. And like the above-the-surface portion of any iceberg, in fact, railroad dollar statistics can be downright deceptive.

Those L&D dollars do not measure dissatisfaction which causes traffic to shift to trucks. Such traffic is not lost to individual railroads but to the industry as a whole—and, as such, becomes an industry problem. When the Traffic and Transportation Section of U. S. Steel zeroed in on the railroad L&D problem as it affected certain finished steel shipments, it quickly became obvious that there was little on which valid decisions could be based.

● **What do they tell?** Many railroads have been striving to develop L&D patterns. In available statistics, however, there are many averages with little indication if they represent a substantial, or only an insignificant portion, of the problem. There were, when USS undertook its study, no railroad figures on just which steel products were subject to damage, and just where and how these products were moving. It was not fascination with statistical analysis, but growing complaints from customers that caused USS to undertake, late in 1965, a thorough study of its most damage-susceptible product — tinplate. Although steel is probably the toughest manufactured product moved in volume by railroads, it was incurring transit damage.

After a study of well over 2,000 carloads of coiled and sheet tinplate (probably one of the most thorough analyses of steel shipments ever made), USS personnel have developed loading procedures and come up with car arrangements which are paying off in a big way. Not only are relations with USS customers benefitting from this work. There has also been a substantial reduction in damage claims filed against railroads handling tinplate traffic.

● **What is the problem?** In the face of equipment refinements and new loading methods, another fact is becoming obvious from the USS investigation. Impacts to which steel products are subjected during rail shipments are becoming more frequent and more intense. That these trends can be countered successfully is also being demonstrated. Through it all, however, the basic problem for U. S. Steel has been one of customer satisfaction. This means more than getting a satisfactory product out of the producing plant—

COVER CONTOURS on cars differ so that loading is complicated. Space occupied by lift-off covers is making integral type more attractive in steel mills.

it means getting it on the customer's receiving dock ready for his use in routine, scheduled fashion—in short, making sure that business will not be endangered.

To follow the more than 2,000 carloads involved, the headquarters Traffic and Transportation group in Pittsburgh and the five USS regional traffic offices were brought in on the problem. At the four selected shipping points, loading was observed and outbound loads were inspected. At destinations, any indication of load shifting, no matter how minor, brought USS representatives in for a thorough inspection. All such cases were photographed and diagrammed. This was followed by careful analysis of causes, followed by solutions to the various phases of the problem.

USS summarizes the "iceberg" phase of its tinplate L&D problem (as separated from that of the railroad claims):

—Threats to USS participation in the tinplate market;

—Operating delays to customers' production caused by material which is not usable or which must be processed immediately to avoid corrosion damage;

—Increased material inspection costs for customers;

—Delayed unloading of cars and slowed turnaround when load displacement is discovered;

—Poor shipper-railroad-receiver relationships.

● **More than claims.** Increasingly, customers are taking exception to any shifting of packaged tinplate on pallets —and these complaints come to the shipper, not the railroad. In the first phase of the study involving a sampling of almost 1,000 carloads of tinplate moved between January and September 1966, there was some degree of damage in 17% of the cars. This included 7% which USS rated as "major" and for which claims could have been filed against railroads. The 10% rated as "minor" damage was of a nature involving only USS and its customers—such irregularities as damaged wrapping which could have permitted the entry of moisture, or pallets which were not reusable.

RETARDER PLATE lifted and pallet moved from original position indicate impacts which USS finds more severe.

The study covered tinplate shipments from four USS facilities: Irvin Works near Pittsburgh; Fairless Works northeast of Philadelphia; Gary (Ind.) Sheet and Tin Works; Fairfield Works near Birmingham, Ala. All the loads from these mills to selected destinations in three regions—South, Southwest and Midwest—were subjected to scrutiny. After the gravity of the damage problem was fully appreciated in 1966, USS traffic men bore down on refining the "floating load" system which had been in use. This meant beefed-up banding, additional filler blocks and other ways to assure that the unitized loads would move in a controlled manner that would dissipate damaging forces without lading damage.

● **Covering the situation.** Tinplate moves in box cars and gondolas. Because of the nature of the commodity, gondolas in this service are exclusively of the covered type introduced first about a decade ago. The gondolas being supplied to USS in 1966 had the following characteristics;

—70-ton capacity, increasingly restrictive as weight minimums grow;

—Lift-off covers, not always contoured for the "eye" (or core) of the coil loaded vertical;

—Conventional draft gears.

While many of the covered cars had no bulkheads, this was not always a matter of design. And even when these load dividers were present, they were often inoperable or damaged. The "retarded floating load" of this period consisted typically of four clustered coils toward each end of a gondola, semi-restrained and guided. Coils themselves were packed with double-thickness vapor-barrier paper and cardboard caps. Four palletized coils would be consolidated with banding, loaded between guide strips secured to the car floor and "braked" against longitudinal movement by retarder plates nailed to the floor. Clearance of 10 feet was left between the coil clusters and car ends.

● **Still not enough.** Even with such painstaking and expensive loading procedures, the covered gons moving out of one of the four USS tinplate plants showed a discouraging 31% incidence of damage between January and September 1966. The conclusion: If any coil movement was permitted, damage was almost inevitable. The solution: Go to a rigid load.

This decision meant a return to the bulkhead gondola. Right away, old difficulties reasserted themselves. Bulkheads were often missing and, when in the cars, were bent, stripped of facing, or with locking pins and guide rails so damaged as not to be effective. It often took three men and a crane to move a bulkhead in the mill. The result was often additional damage because overhead cranes sometimes cannot be controlled with sufficient precision to achieve the needed adjustment.

With the new rigid load method, a single row of no more than three coils in any group between bulkheads would be placed on the car's centerline. Some changes were made in filler blocks to prevent coil tipping. The next study period—October 1966 through April 1967—involved a sampling of 400 more carloads of tinplate. While a discouraging 17% over-all still showed damage of some degree, gondola damage from the one shipping point had dropped from 31% of all loads to just over 8%. With some additional bracing against transverse movement of palletized coils, gondola shipping was expected to continue to improve.

There was another significant factor in gondola shipping by this time—the availability of a substantial number of cars with long-travel cushioning. In some cases, customers had been so impressed with this new equipment that they were specifying "either ship in cushioned cars, or don't ship." The new cars also had more substantial bulkheads, further enhancing the rigid load characteristics which USS mills were striving for. Between May and July 1967, aided primarily by the cushioned gondolas, the incidence of damage in

all 250 cars checked was down to 15%, and in gondolas to only 3.8%. The final study period, August through November 1967, involved 400 carloads and showed virtually no damage in any gondola shipments from one point and only 4.4% over-all.

● **What shipper wants.** When results of this study were in, USS Traffic and Transportation came up with its needs in covered gondolas. These requirements, similar in nature to those recently issued by the American Iron and Steel Institute (RA, March 18, p.44) include the following:

—100-ton capacity;

—Long-travel cushioning;

—Minimum inside height of 60 inches at all points under the cover;

—Integral cover, if possible;

—Flush, wood-lined ends.

Box car shipments, initially less critical than gondolas, assumed a new gravity as the first problem was solved. In box cars, tinplate may either be palletized coils or palletized packages of flat sheets. Their pattern of damage followed that detected in gondolas.

Practice is to use the rigid load when there is sufficient load restraining equipment in the box car to make such patterns possible. In the face of rising labor costs, USS and its customers have come to favor the solid bulkhead as opposed to individual cross-members for dividing the load. Bulkheads were not, however, substantial enough, and development of a sturdier design was encouraged. USS specification for a successful bulkhead for box cars is much like that needed for gondolas:

—High strength with ability to resist single-point contact of 40,000-pound coils undergoing 12-mph impact;

—Suspension which resists skewing so it can always be moved by one man and will be self locking when impacted;

—Clearance of 3 inches at bottom for uninterrupted floor guide strips.

● **Need for box cars.** The box car needed by the steel industry, as USS sees it, will be a 100-ton, 60-foot model with a minimum 16-foot door opening and four bulkheads inside. While some customer unloading systems now favor the covered gondola, there will be a continuing and growing need for high-quality box cars for tinplate.

Despite favorable rate differentials, USS concedes that many shipments of fragile steel products have been driven from rail to truck because of unsatisfactory rail performance and the expense of preparing suitable loads. And, says a USS spokesman, in the face of higher and more frequent impacts, railroads must quickly expand their fleets of covered gondolas and box cars with suitable cushioning and bulkheads if they are to maintain their share of tinplate traffic. ■

TRAFFIC POLL REPORT

1) Is your current experience with railroad loss and damage better or worse than it has been in recent years?

Better	45
Worse	15
The same	8

2) What can railroads do to reduce the L&D problem?

3) What can shippers do to combat the L&D problem?

For answers see the accompanying text.

THE WAR ON L&D

Poll respondents cite gains in the L&D battle

U.S. shippers, however, have many suggestions for improving the never-ending campaign against railroad loss and damage.

Most shippers' experience with railroad loss and damage has improved, according to this month's Traffic Poll.

Forty-five Poll respondents (see table above), cited an improvement in their experience—but 15 said their current experience indicates a deterioration in railroad service.

● **Faster response.** Among those who said their railroad L&D has improved was D. C. Ward, transportation manager for the Hoerner Waldorf Corp., Keokuk, Iowa. "I feel," he said, "they are paying claims faster, providing better equipment—much of it specialized. They are trying to promote more careful handling and packaging."

Ward said that shippers could do several things to combat the L&D problem. They could, he specified, "use containers and work with carriers to secure special purpose cars on an assigned basis, or even buy or lease their own."

Railroads should place more emphasis on proper packaging and loading, said Charles W. Hall, manager—transportation, Midwestern area, Armco Steel Corp., Kansas City, Mo.

Hall had three basic suggestions about the things shippers could do to combat the L&D problem. First, he said, they should teach their employees about load securement. Then, shippers should use special equipment the way it was meant to be used. Thirdly, he concluded, it would help if shippers communicated with their customers, suppliers and the carriers about the condition of material on arrival at destination.

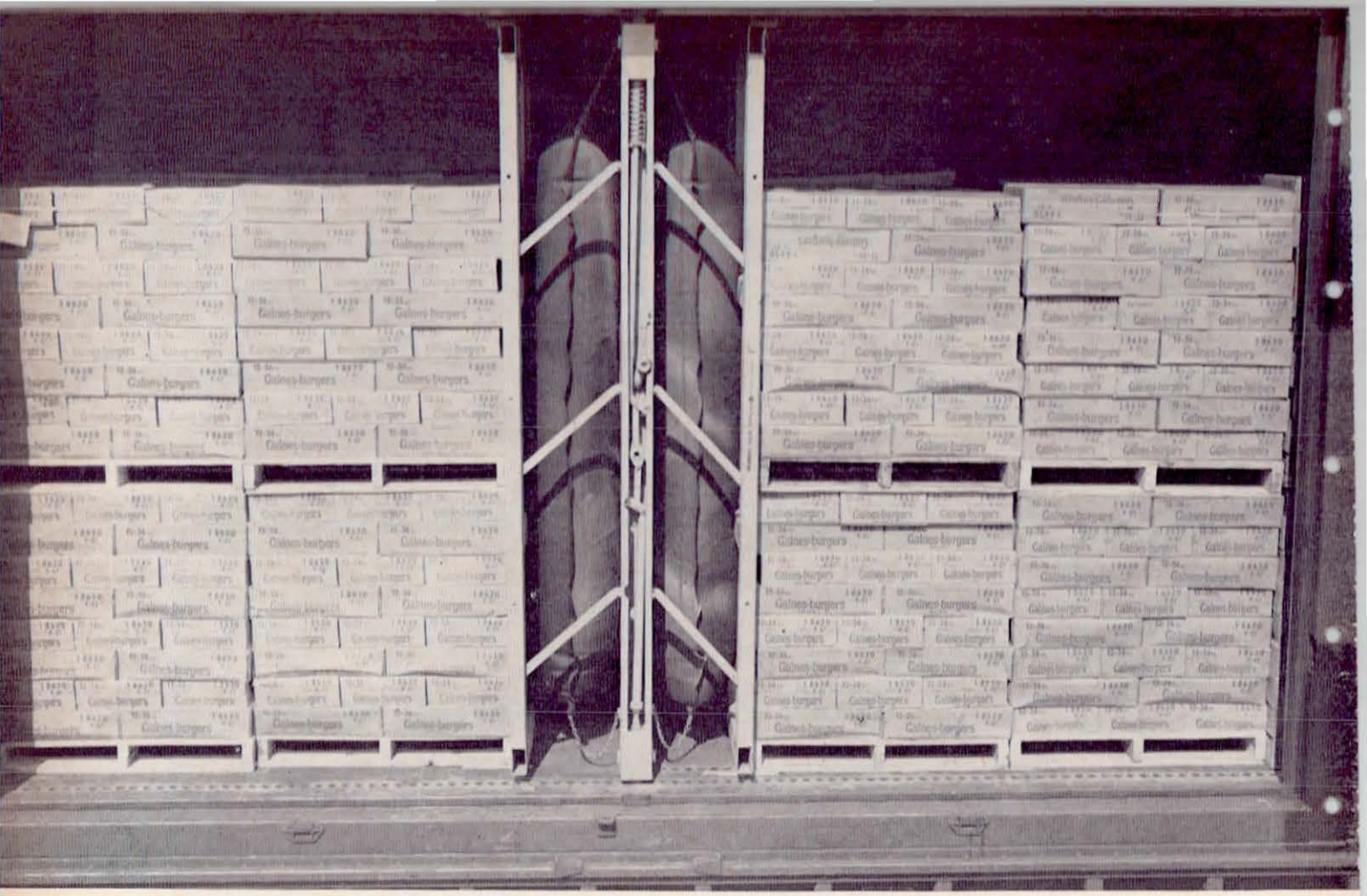
If railroads provided more cushion underframe cars it would go a long way toward reducing the L&D problems, said John J. McFadden, corporate traffic manager, R. R. Donnelley & Sons Co., Chicago. Also, McFadden added, shippers could help the situation by better marking and packing.

● **Bad in-transit handling.** "Still the biggest loss-and-damage problem," said J. J. Kelly, manager district operations, California & Hawaiian Sugar Refining Corp., San Francisco, "is improper handling in transit."

Kelly had some advice for shippers. "Periodically review your loading practices to be sure everything reasonable is being done to prevent damage." Shippers also, he added, should "attempt to determine the point and cause of damage and correct it. Contrary to the belief of many people, mishandling on the part of carriers is generally the main problem. As an example, when a car arrives at destination with an 8-inch shift from an end wall, there obviously has to be damage.

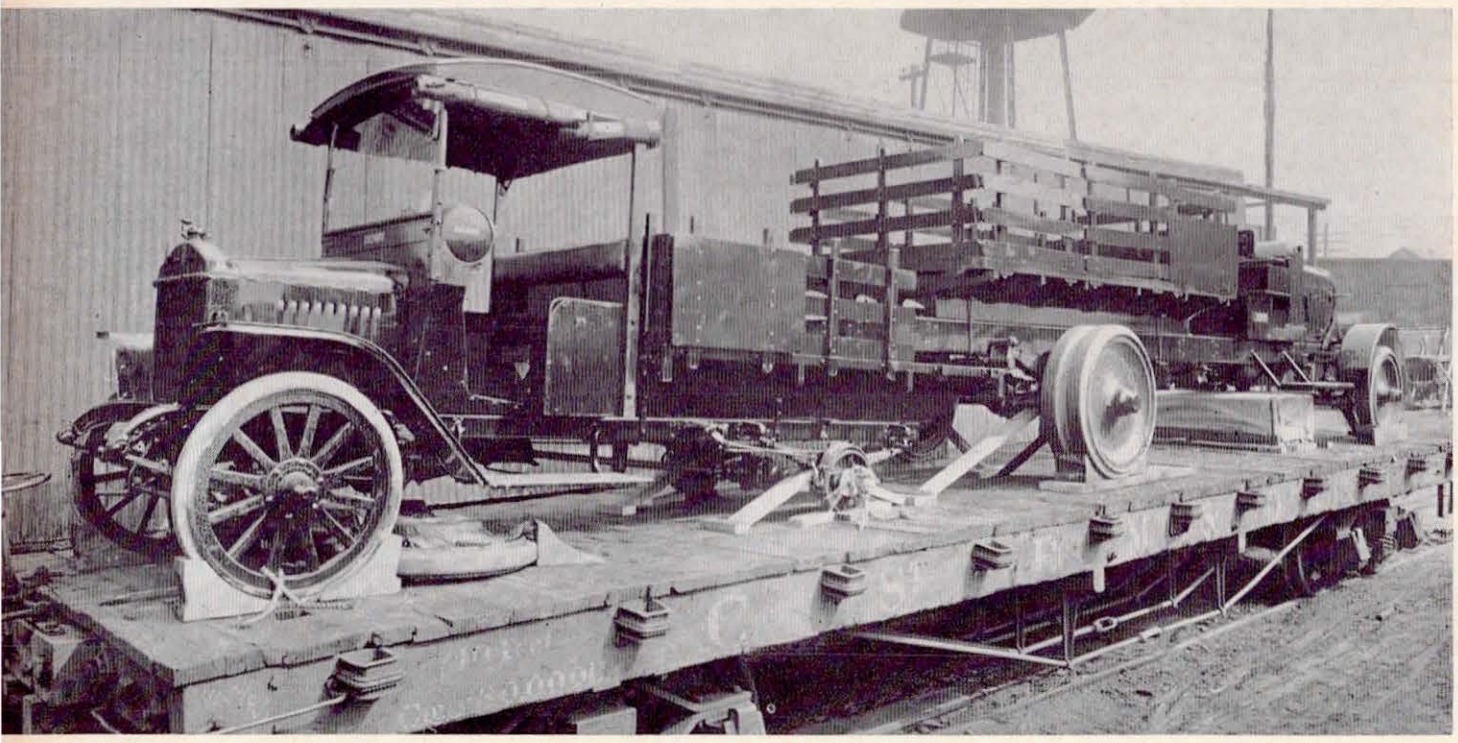
"We have had reports of 30-inch

(Continued on page 94)



THIS IS HOW IT IS with the newest type of bulkhead that uses Air-Pak pneumatic pressure to secure loads.

50 years of damage prevention



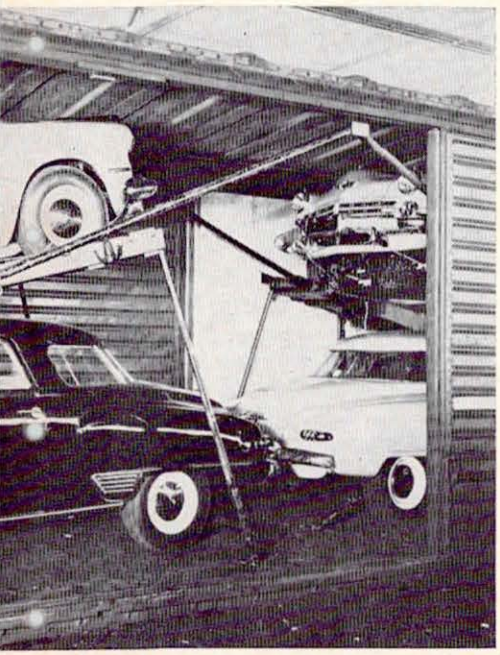
THIS IS HOW IT WAS when ropes and wood blocks were used to secure trucks on flat cars.

BULKHEAD LADING-PROTECTION is taking a variety of forms in the 1960s, including the non-rotating DF-B, above, which was introduced in 1966.

It all started with a block of wood and an idea for perfect-shipping automobiles on flat cars. Way back then, the enterprise was known as E. S. Evans & Company, Inc., Automobile Loading Exports.

The blocks of wood are long gone—but today, 50 years later, the ideas for perfect-shipping are still pouring out of the enterprise now known as Evans Products Company, Transportation Equipment Group.

This year represents a kind of dual anniversary for Evans—50 years since the grooved wheel blocks and tiedown gear for autos gave Evans the first big boost, and 20 years since the introduction of the DF loader put the company in the big leagues of rail-freight damage prevention.



EVANS EXPERIMENTATION in the 1930s resulted in designing of the box car Auto-Loader. While complex, it was an effective way to move new automobiles.

DF equipment was no instant-winner. Evans' veterans recall that fewer than 10,000 carsets were sold in the first four or five years. But the idea grew on industrial traffic managers and then on railroads. And over the 20 years since '48, Evans can count 103,000 cars fitted with either standard DF or DF-2 devices.

Belt-rail-and-crossmember equipment is still in demand—but the '60s have been the decade of the bulkhead, with the DF-B and side-wall fillers coming along in 1960-61. More than 20,000 cars have since been equipped with each type of load-restraining device.

What's immediately ahead? For Evans, it's "Air-Park," the pneumatic system of bulkhead load control which the company's engineers and marketing people believe will be the big-demand item for the next five years or so.

How about the long-range view? Observers wouldn't be surprised if a key word turned out to be "intermodality." At some point along the way, Evans has been deeply involved in every one of the transportation modes—rail, highway, air, sea—that may be participating in the intermodal future of transportation. The rail aspect of the operation has been best known, along with provision of DF gear for over-the-road and TOFC trailers. But the Navy has used Evans-developed dunnage on ammunition ships. And from World War II through the Korean War, military aircraft were outfitted with Evans devices for accommodating both cargo and personnel movements.

The problems of moving freight damage-free in an intermodal operation may be severe. As an Evans' vice president points out, cushioning or other lading protection will have to be designed to meet different kinds of stresses or impacts in each separate type of transportation.

But the engineers are taking a look. And, of course, Evans is already a producer of container equipment for intermodal use.

Closer to realization may be a series of other equipment developments, in the thinking, designing, engineering or testing stage:

—Already out on test is a heated coil car, designed to prevent in-transit moisture condensation which can stain such commodities as aluminum or specialty steels.

—A long-car coupler-centering device is in the works.

—Evans and Waugh Equipment are 50-50 owners of Hydra-Cushion, and, Evans engineers say, "further tests are under way in the area of cushioning-device development."

—Developmental work is in progress on application of "Air-Pak" to high-cube cars and to non-cushioned equipment.

—An all-new concept is being tested in which a multi-purpose device would serve as pallet, bulkhead or deckboard, interchangeably. It's designed for rail cars, but the principle will also work with highway trailers.

—New studies are moving forward, in the areas of containerization and new-automobile transportation.

Not all of these ideas, probably, will come to success. Long-time Evans people are well-aware of the vicissitudes of life among the transportation industries—and they recall, somewhat grimly, the 1940 introduction of the Auto-Railer, which permitted use of automotive-type vehicles on railroad tracks. Auto-Railers didn't catch on, Evans went in other directions, and it was left to other suppliers to develop the road-rail equipment which now has caught the fancy of railroad buyers.

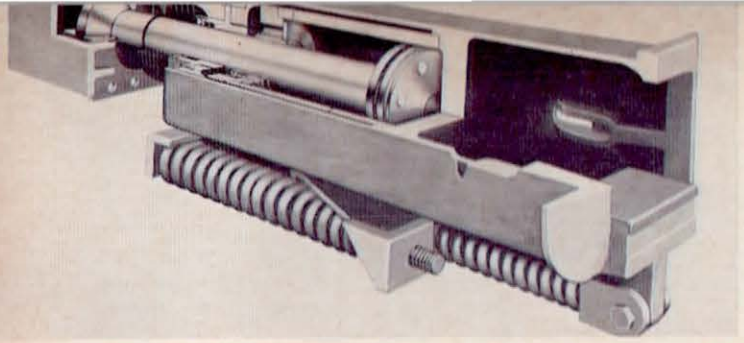
Company engineers also look back in sorrow upon the 1952 introduction of the bi-level Auto-Loader, which permitted double-deck loading of six automobiles on a flat car. This one didn't swing either—until a decade later, when the bi- and tri-level auto-rack cars began to revolutionize automobile distribution.

With its location in suburban Detroit (Plymouth, Mich.) however, Evans has always been close to the automobile business—and marketing men are looking hard, right now, at possibilities in both the shipment of auto parts and the movement of finished units to dealers.

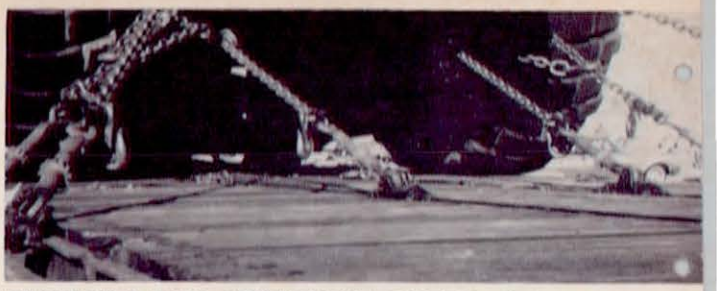
That multi-purpose interior separator could bring a new look to parts collection and delivery; and there are those who see startling changes in methods of handling finished automobiles sometime off into the future—perhaps even involving packaging of new cars which will enable a dealer to stack his stock, much as a grocer might stack cases of canned goods.

All in all, Evans people are not so much inclined to look back on the first 50 years as they are to ponder the next 50—or 25 or 10 or five—during which, almost anybody will bet, change will come with head-spinning speed.

There is, in short, a commitment to railroading—and an interest in intermodality. ■



TYPE HD CUSHIONING UNIT provides 15-inch hydraulic stroke in each end of the car—**FreightMaster**



HEAVY-DUTY LOAD SECUREMENT SYSTEM eliminates need for wiring, blocking heavy vehicles—**MacLean-Fogg**

THE WAR ON L&D

Some new weapons in the arsenal

Research & development men continue to turn out new devices to battle loss and damage.

Very few people go bear-hunting with a switch, these days—and even fewer are figuring on whacking away at the loss-and-damage problem with less than the best in equipment, or less than the best in technique.

Recent months have seen a number of new hardware developments—covering various aspects of L&D prevention from car-cushioning to load restraint to smoother yard operations. And a spot-check of major suppliers in the field indicates that '68, too, will be a good new-device year—with R&D work keyed to need and with several manufacturers gearing up on new-product developments in time for the Railway Supply Association exhibition next October.

• **TOFC/COFC.** One of the major efforts of '67, in a broad sense, came with the intensive engineering effort commissioned by Trailer Train in its search for an all-purpose trailer/container flat car. With ACF, Pullman-Standard, General American and Bethlehem Steel participating in the program, TTX had varied choices open. It adopted a design—and in connection with the "competition," several new-design trailer and container securement devices came into being.

In addition, Fruehauf's Magor Railcar Division came out last year with its Flexi-Quad multi-purpose car, with such features as end-of-car cushioning, a 30-inch-wide top plate on the trailer stanchion and automatic locking for all USASI container corner castings.

L&D prevention via equipment-damage prevention also got a boost from the cushioning people. On the current-item list:

—FreightMaster came out with two new cushioning units and a special-design unit, in addition to a new sway arrestor. The Type HD unit provides 15-inch hydraulic stroke in each end of the car; the Type AR-F is designed for use on low-deck rack cars and permits use of 60-inch couplers in pocket space which formerly would accommodate only 43-inch couplers; and the SP-E unit, with seven-inch travel, is designed to replace draft gears in cars with 24 5/8-inch pockets.

—Keystone Railway Equipment introduced its Model SA-02 single-acting unit, which is said to provide comparable cushioning protection to that of the widely-used double-acting unit with additional savings in weight and installation cost.

—At least two other major entries in the cushioning field were reported to be working on new designs.

• **Guarding the freight.** As usual, emphasis on load-restraint and load-protection came from a wide variety of suppliers in the L&D-prevention field, and there's more coming:

—Brandon Equipment, Division of Poor & Co., reports good results from test loadings of a prototype flat car equipped with new-design securement devices for wallboard, packaged lumber and plywood. Individual chain assemblies have adjustable anchors, ratchet load binders, compression units and a quick-release mechanism.

—MacLean-Fogg Lock Nut Co. calls attention to its heavy-duty flat-car load-securement system for tracked and wheeled vehicles in the up-to-150,000-pound range. The system makes use of four recessed longitudinal channels, movable anchors and half-inch alloy chain assemblies.

—From Shunk Manufacturing Co. comes a three-section, telescopic cover designed for permanent installation on flat cars, gondolas and steel-coil cars. The complete cover telescopes into one-third of its length, leaving two-thirds of the car length open for loading and unloading.

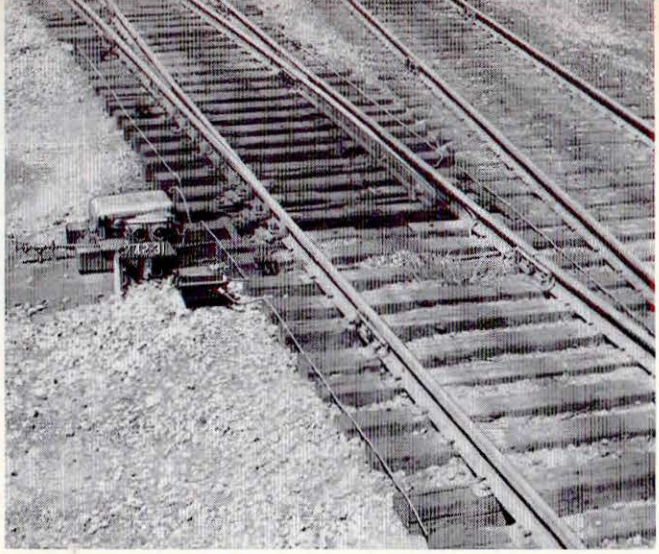
—Evans Products Co. introduced a new gondola bulkhead which is adjustable at two-inch intervals. The unit moves on large rollers, and can be locked in place against cargo by movement of a single handle.

—Evans also came up with its Air-Pak pneumatic bulkhead system, featuring a fixed center bulkhead, two pneumatic bags on each side of the center structure and two movable outer panels which expand to exert constant pressure on the lading.

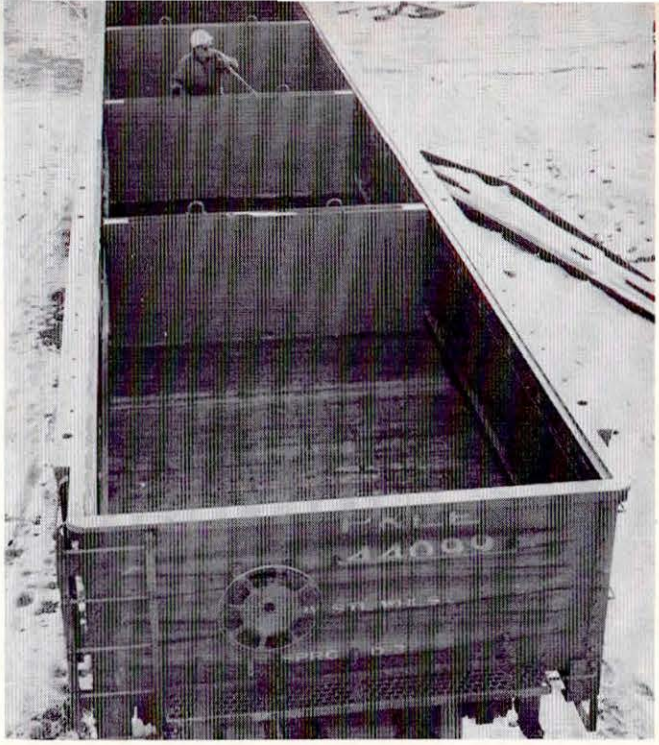
—Acme Products Division, Interlake Steel Corp., pointed to increasing use of its disposable inflatable dunnage, to cut damage claims and to reduce load-bracing costs.

—Equipment Specialties Division of Unarco Industries is putting emphasis on its Auto-Lok bulkhead design and on two new side-filler units, Type HD for width adjustment only and Type HD-L which provides both width and length adjustment. The Auto-Lok system with side-fillers and 12 1/2-foot staggered doors are key elements in the Equipco Fulload car design, which permits full 56-pallet loading in a 50-foot car. New slip-sheets, developed by Equipco and Libby McNeill & Libby, are also aimed at providing full utilization of car capacity.

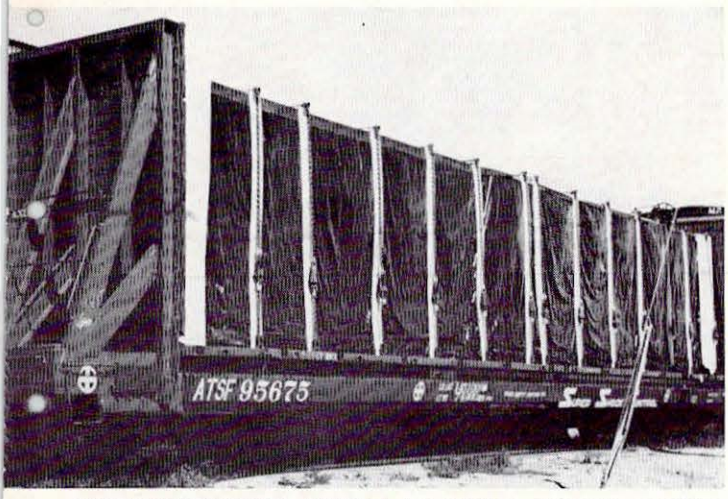
While most product developments involve either the car structure itself or the protection of the load, improvement of actual operating practices isn't being overlooked. Among the recent offerings: The Link FSD 1-A presence detector. Western Railroad Supply points out that the system, installed at switch locations, electronically signals the presence of a stationary or moving car and thus prevents movement of a switch before the car has cleared. ■



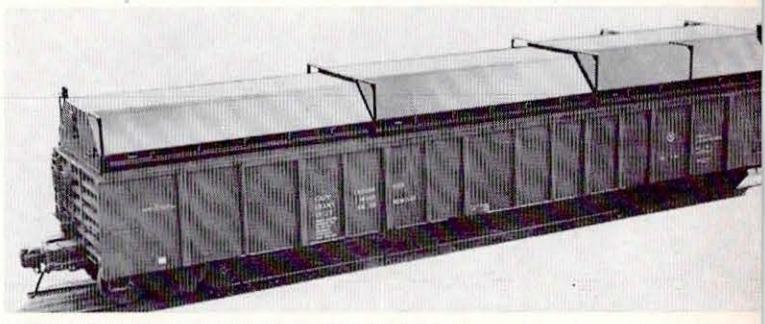
PRESENCE DETECTOR prevents accidental throwing of switch when car is moving through—**Link**



GONDOLA BULKHEADS, adjustable in two-inch increments, lock in place with single handle—**Evans Products**



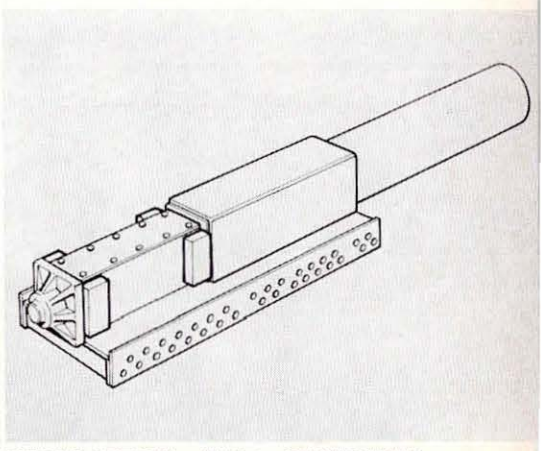
LOAD-SECUREMENT DESIGN for lumber products provides for quick application, release—**Brandon**



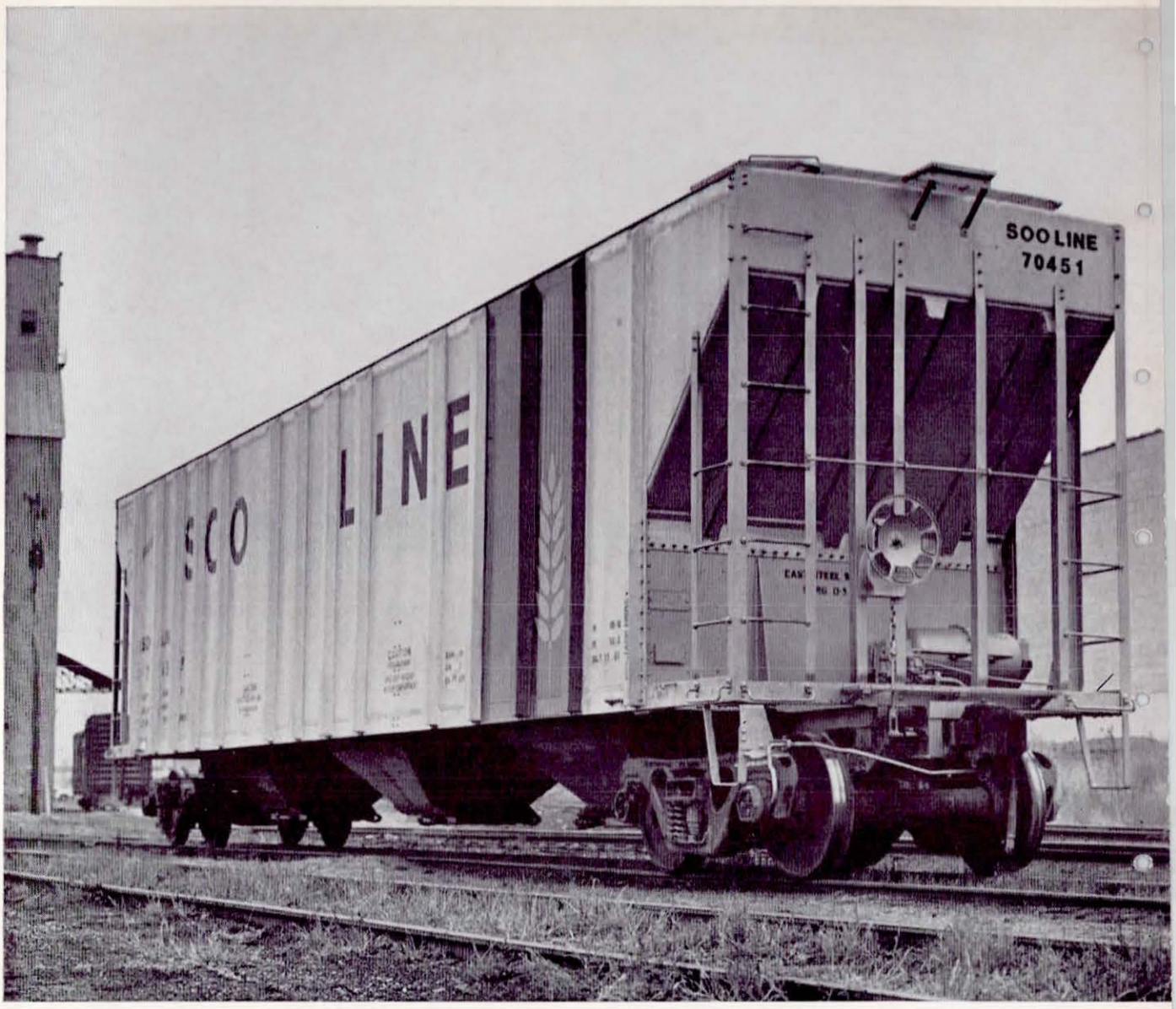
THREE-SECTION TELESCOPE COVER UNITS can be manually operated, automatically locked—**Shunk Mfg.**

DISPOSABLE INFLATABLE DUNNAGE cuts bracing costs, can be thrown away at destination—**Acme Products**

NEWLY-DESIGNED SLIP SHEETS help provide for maximum use of car space —**Equipco, Libby McNeil & Libby**



SINGLE-ACTION UNIT CUSHIONING, comparable to double-acting gear, is lighter, costs less—**Keystone**



This car will work 11 months more..

Aluminum-body covered hoppers need no lining,

One of the important differences between steel and aluminum-bodied covered hoppers is a difference you don't see right away. Most steel covered hoppers have interior linings and need re-lining and lining patch-up after a few years of normal service; aluminum cars don't.

This simple fact can mean a difference of *11 months* in utilization during the first 15 years' service of the two cars. Steel cars can expect to have that much down-time for re-lining and lining patch-up in their first 15 years. This was emphasized recently by Mechanical and Transportation Departments of four major railroads. First, these railroads agreed that steel covered hoppers needed complete re-lining every 5 to 6 years, at a cost of $700 each. Interim lining patch-ups were also needed about every 2 years, at a cost of $100.

Average down-time involved for each re-lining or lining patch-up was 7 weeks, including movement to shipper who rejects the car, to the shop where lining work is done, time lost waiting for position in the shop, and back into service. Over 15 years, this adds up to 11 months. Still another cost to be considered is the loss of business while the car is being repaired.

Aluminum-body cars would be working and earning while their steel counterparts are in the shop, because they do not rust, they resist corrosion, clean eas-

than this car in their first 15 years.

save down-time, offer higher utilization.

ily—need only simple hosing and sweeping to stay clean . . . *never need costly interior linings.*

Aluminum cars earn more, too, when they're in service. They carry less deadweight, more payload. They earn higher per diem rates in off-line service, and have over $2,000 more scrap value than steel cars.

Investigate all the benefits these cars offer with the leader, Reynolds. Reynolds pioneered in developing aluminum for the railroad industry, still supplies more of the metal for railroad equipment than any other company. Contact your man at the local Reynolds office or write *Reynolds Metals Company, P.O. Box 2346-TM, Richmond, Virginia 23218*

Before you order covered hoppers, consider these facts:

1. Aluminum-body cars need no linings, offer higher utilization.
2. Aluminum-body cars resist corrosion, never rust, are easy to clean out.
3. Aluminum-body cars carry more payload.
4. Aluminum-body cars earn more off line per diem.
5. Aluminum-body cars reduce operating costs.
6. Aluminum-body cars have high scrap value.

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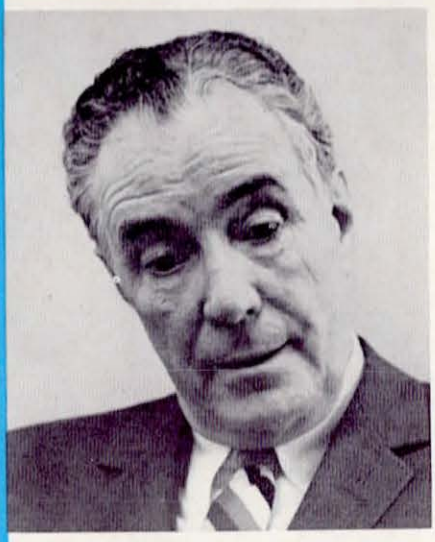
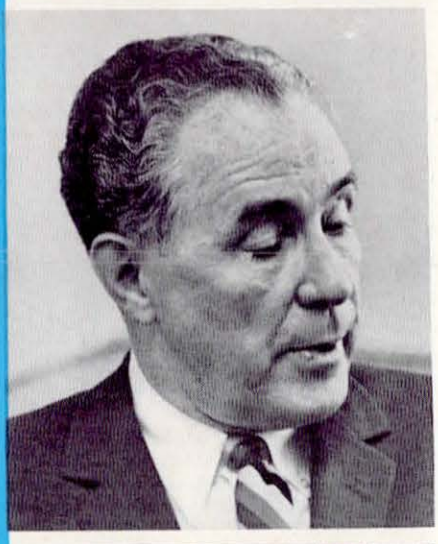
GOLDEN SPIKE YEAR— 1969

A golden opportunity for railroads





"May 10, 1969, will be a time when we will look ahead to the next 100 years. As we go into the space age there is no limit to the exciting things that will happen on the railroads. Telling the railroad story is a job that can never be done too often. The Golden Spike Centennial may be just the peg we've been looking for."

Thomas M. Goodfellow
President, AAR
Chairman, Golden Spike Commission

Photographs for Railway Age by Maurice Mates

On May 10, 1869, the driving of the Golden Spike at Promontory Summit, Utah, signaled the completion of the first transcontinental railroad across the United States. Last year Congress and President Johnson created the Golden Spike Centennial Celebration Commission to plan appropriate observances during 1969.

Will Golden Spike Year be merely an excuse to recall the grand old days of railroading? The answer, from AAR President Thomas M. Goodfellow—who is also chairman of the Centennial Commission—is an emphatic "no."

"It's appropriate that we should recognize this great and dramatic moment in American history," Goodfellow told a railroad meeting in Batavia, N.Y., March 14. "But we can't snuggle down in the warmth, comfort and false security of past glories. Our destiny—the railroad destiny—lies in the future, and the progress we make to meet the challenges which loom ahead."

To find out how Golden Spike Year can contribute to this goal, Railway Age Editor Luther Miller and Washington Editor Walter Taft taped the following exchange with Goodfellow.

Q. Mr. Goodfellow, how will the Centennial be celebrated next year?

A. For one thing, we're hopeful that all during the year — from May 10, 1968, through May 10, 1969—there'll be a whole parade of celebrations all along the lines of the Southern Pacific and the Union Pacific — places like Sacramento, Promontory Summit, Corinne, Brigham City, Omaha. I've made several trips out that way and I'm amazed and delighted by the infectious enthusiasm of the people to stage their own celebrations to mark the date when the railroad reached their town or when some significant event happened in connection with the building of the railroad across the country. But I think there will also be activities at points

far removed from California, Nebraska and Utah.

Q. What plans do the Southern Pacific and the Union Pacific have for the Centennial?

A. They've been working on this for some time, and they're much farther along in their planning than our Commission—which, by the way, has representation from both railroads—is in its planning. They're making movies, promoting Golden Spike art exhibits, sponsoring model railroad contests, working closely with local historians and cooperating with plaque placers and museum builders in an all-out effort, not only to commemorate the event that happened 100 years ago, but to tell the story of modern railroading. These various programs will do much more than commemorate the event that happened 100 years ago. They'll also tell the story of today's railroads—and tomorrow's. If we can extend the great work that the SP and the UP are doing to a national scale — indeed, international, for the linking of the Atlantic and the Pacific was an event that affected the commerce of the world, not only the nation— if we can do this, then all of us are going to benefit greatly from Golden Spike Year.

Q. Isn't there the danger that the Golden Spike celebration, which is tied to an event that took place during the cinders and smoke era, will reinforce the widely held view that railroads are yesterday's transportation?

A. There's certainly a danger that the Golden Spike might tend to give us a woodburner image. But all of us on the Commission are aware of this, and we are pretty well agreed that this is not a story of two ancient locomotives that met at Promontory Summit, but a story of how the coupling of the eastern and western parts of the United States was an event of international significance from which came the modern transportation systems that we now have—not only rail, but highway and air. For example, the present talk about using North America as a land bridge in international containerization derives directly from the historic event that took place in Utah 100 years ago. And containerization is as modern as tomorrow.

Q. So the emphasis will be not on the past but on the present and the future?

A. Absolutely. May 10, 1969, will be a time when we will no longer look back but will look ahead into the next 100 years. We are leaving the steam engine, woodburner, stagecoach and Pony Express era behind us. We're going into the space age. And the things that are going to happen on the railroads in the next 100 years are going to be just as exciting as those that are going to happen in all the other branches of transportation—indeed, in all industry in all the countries of the world. As we go into the space age there is no limit to the exciting things that will happen on the railroads.

Q. We know this, within the railroad industry, and we keep telling each other this—but how are we going to put this story across?

A. That's the job we have ahead of us during the next year. Telling the railroad story is a job that can never be done too often or too completely. The Golden Spike Centennial celebration may be just the peg we've been looking for to hang this story on. It gets a little tiresome to people to hear the same old story in the same old way, so we like to take advantage of every opportunity that presents itself to tell the story on a new stage.

Q. What we're really talking about is the railroad image. You feel that Golden Spike Year will provide an opportunity to improve this image?

A. Certainly it can give us an important springboard. As you know, the glamour of the railroads for many years was the passenger train whistling through the night. And, as the passenger trains have started to disappear from the American scene, many people have thought that the railroads are going out of business. Actually, the passenger business right now constitutes only about 5% of our total business. Maybe this celebration will give us a chance to show the railroads as a living and breathing thing rather than as a dying industry.

Q. All railroads share certain broad national legislative goals. Do you think Golden Spike Year can in any way contribute toward the achievement of these goals, through a greater understanding of what today's railroads are really like?

A. I think we may be able to show the importance of railroads in the over-all transportation picture of the country, and this may help us in our relationship with the governmental people. I don't believe any of these people think we're not important. But sometimes they may get the idea that it's not important for us to have some of the legislation that we feel we require. Now, the Golden Spike is not going to give us any Aladdin's lamp — but it may give us some kind of working tool. These passenger-train discontinuances have hurt our image and we're going to continue to have difficulty with that. But any time you can win the public's attention by using something like the Golden Spike as the springboard, you have a chance to get across your story—and perhaps improve your image. Basically, that's about all we can hope to do with the Golden Spike.

Q. What are the high priority legislative goals of the railroads today?

A. We definitely are interested in getting some legislation that will eliminate the discriminatory taxation that is practiced all over the country, so that we are taxed as everybody else is taxed. We would also like to get some legislation—and we'll try to have it introduced very shortly—on diversification, so that the ICC can actually decide on the merits whether we can diversify into other fields of transportation instead of saying, as they must say now, that we have no right to do this. We are not asking to be allowed to do everything without hearing, but we are going to ask to be judged on the merits before we're turned down on a diversification request to go into another field of transportation. These are two of our top objectives.

Q. If you were the president of a southern or an eastern or a mid-western railroad, what would it take to convince you to contribute to a national observance of the Golden Spike Centennial?

A. I'd have to see that this would either improve the railroad image—and thereby my image as an individual railroad—or I would have to see, somehow or other, how I could get some more freight business out of it. Now, once we know what can be done and how much it will cost, the next thing we'll have to do—if we want to get these contributions from anybody—is convince these people that these celebrations can not only improve our image but perhaps improve our revenue position, too.

Q. Beyond the regional observances now being planned by the SP and the UP, what specific plans are afoot for a national observance?

A. We're still waiting for a preliminary

study to be completed on how all of these events can be tied together. We have many ideas—for example, contests all over the country by the individual railroads, or by the railroads nationally, for such things as scholarships, and this may or may not be followed through. It may be that May 10, 1969, or any other significant date in connection with the Golden Spike, will provide excellent opportunities for railroads to have shows of equipment. They may want to have open houses and invite the general public in to see something that has always been true but not always appreciated—that there's a grand bunch of people working for the American railroads. This would be an opportunity for the railroaders of the country to get acquainted with their neighbors and their neighbors to get acquainted with the railroaders. Perhaps we will ask the railroads to put on their own local shows, marking the celebration by doing this. This would be a very simple way to have a series of activities all over the country. I know lots of people think of television specials. But these things are very expensive and very limited, and whether or not we can ever find the money to do that, I don't know. We haven't made any plans for spending a lot of money.

Q. Apart from any shows the railroads themselves might sponsor, isn't it likely that many existing shows—for example, the "Today" and "Tonight" shows, or the Walter Cronkite and the Huntley-Brinkley shows, or even documentaries—will feature special programs on railroads during Golden Spike Year? How can we in the railroad industry work to make such exposure during Golden Spike Year positive rather than negative?

A. If the Johnny Carsons will let us on their shows, we can get some railroad people who are vocal and personable to tell not only about the Golden Spike but about modern railroading.

Q. Do you think we can accomplish this public relations effort within our existing framework of public relations and advertising know-how? Or will we require outside counsel?

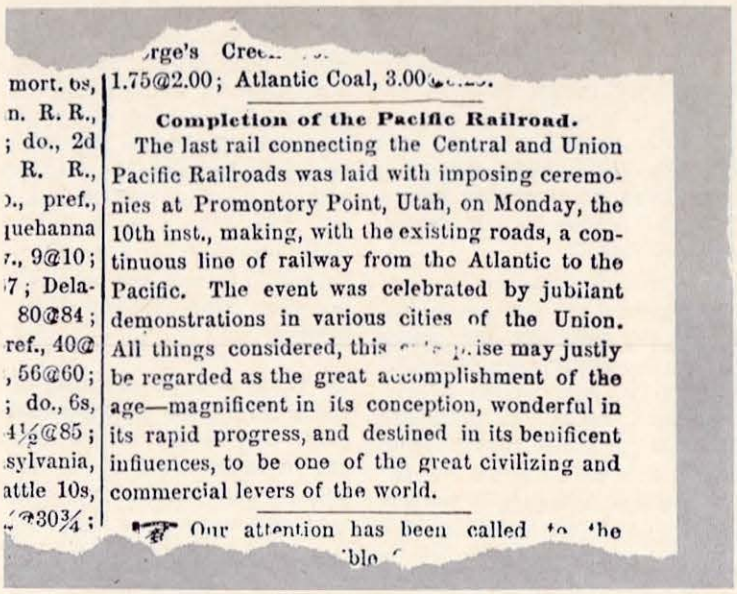
A. I think we should probably have some outside counsel. But certainly the public relations staffs—and the railroad public relations advisory committee that we have helping us here on the AAR—are very capable. I think all we have to do is feed them the ideas. Right now we are trying to analyze the ideas so we can shoot them to these experts in our own industry. I'm sure they'll run with the ball—and run with it well—when we give it to them.

Q. What kind of money are we talking about—and where is it going to come from?

A. I have no fixed idea of how much money this is going to take. This celebration, of course, has important implications for all of transportation. So the Department of Transportation is interested. The Department of the Interior is establishing a park at Promontory Summit. There may be some assistance from the state of Utah. Other than that, we may have to ask for contributions from not only the railroad industry but the railroad supply industry and from labor. Congress perhaps will be able to get us an appropriation in the fiscal year starting July 1. But actually, until we get some preliminary studies finished, we're not quite sure how much money the minimum is. I don't think there's any maximum—but we will have to establish some kind of minimum of what we need to spend so that we can set about raising it.

Q. What kind of participation do you expect from the railway suppliers and from the labor organizations during Golden Spike Year?

A. We have on the Commission representatives of both the suppliers and the brotherhoods. The supply industry is very much interested, during the next year, in trying to get its neighbors interested in railroads, and in using the Golden Spike as a platform to do this. Certainly labor wants a part in this, and they have told us that they will help in any kind of celebrations in which labor can participate. Jokingly, our labor representative said: "All I represent in the Golden Spike ceremonies is the Chinese coolies." But actually this gives labor an excellent chance to show just how great a factor labor has been in the success of the railroads. We also have eight members of Congress on the Commission, and certainly Congress is interested in promoting the United States internationally—and the driving of the Golden Spike 100 years ago had its effect on transportation all over the world. ■



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Completion of the Pacific Railroad.

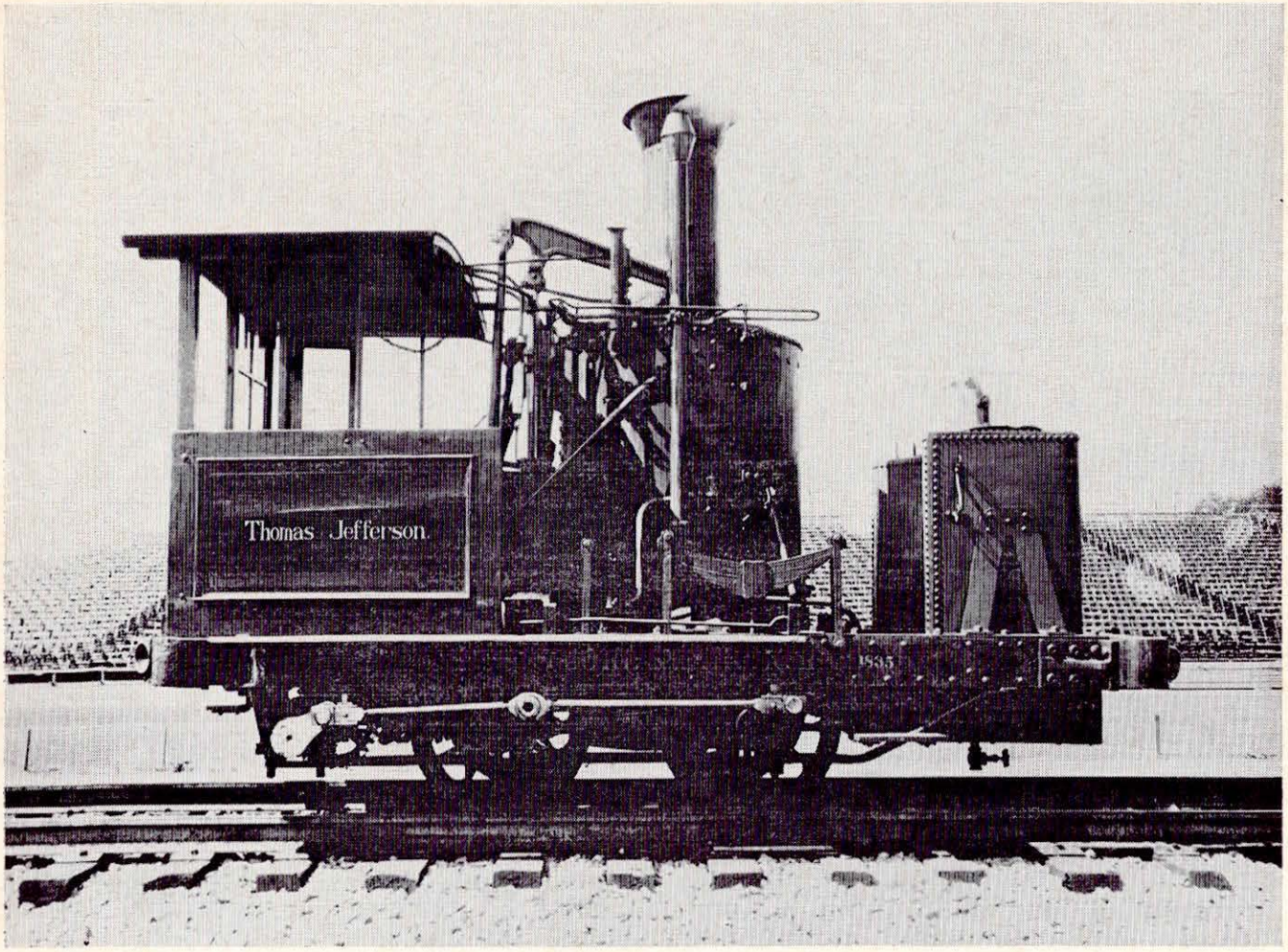
The last rail connecting the Central and Union Pacific Railroads was laid with imposing ceremonies at Promontory Point, Utah, on Monday, the 10th inst., making, with the existing roads, a continuous line of railway from the Atlantic to the Pacific. The event was celebrated by jubilant demonstrations in various cities of the Union. All things considered, this ... ise may justly be regarded as the great accomplishment of the age—magnificent in its conception, wonderful in its rapid progress, and destined in its benificent influences, to be one of the great civilizing and commercial levers of the world.

Our attention has been called to the ... ble ...

We reported it this way 99 years ago

In May 1869 the American Railroad Journal—a Railway Age ancestor—recorded the Golden Spike ceremony in 13 lines of type. To insure that the Centennial gets somewhat more recognition, a Celebration Commission headed by AAR President Goodfellow is planning a national observance. Other members of the Commission are Utah Senator Frank E. Moss, vice chairman; Senators Wallace Bennett of Utah, Alan Bible of Nevada and Thomas Kuchel of California; Representatives Donald G. Brotzman and Byron G. Rogers of Colorado; Laurence J. Burton of Utah and John E. Moss of California; R. R. Bryant, general secretary and treasurer of the Brotherhood of Locomotive Firemen and Enginemen; W. Ashley Gray Jr., president, General Steel Industries, and chairman, Railway Progress Institute; Francis J. Melia, vice president, Union Pacific; and Robert L. Pierce, general solicitor, Southern Pacific. Honorary members are Secretary of the Interior Stewart L. Udall and Secretary of Transportation Alan S. Boyd.

first junket to Washington



Near the end of August, 1835, four "grasshopper" type locomotives, including the "Thomas Jefferson" (above), carried selected dignitaries from Baltimore to Washington to open a new 40-mile stretch of track. The passengers arrived for the celebration in high style, rolling along in brightly painted, gaily bedecked passenger cars. But when the celebration was over and the paint removed, their special coaches, like all the other boxcars of the era, were made of nothing more exotic than wood.

With each passing year, other celebrations have marked milestones in railroad history, and each year research engineers have found more and more substitutes for wood . . . yet each year the rail industry requires more wood than ever. Last year, for example, Alger-Sullivan produced nearly five million board feet of ALGER-DECK boxcar flooring for America's railroads.

Laminated from edge-grain strips of quality longleaf yellow pine, ALGER-DECK floors are easily installed and stronger per pound than steel. Cargo can be easily battened to the hard wood flooring. As a bonus to food shippers, ALGER-DECK is treated with non-toxic preservatives approved safe for food products without special containers. These preservatives are deposited in virtually every cell of the wood by Koppers Company's remarkable CELLON® process. Following treatment, ALGER-DECK is accurately tested for retention of preservatives and finally finished to your required dimensions.

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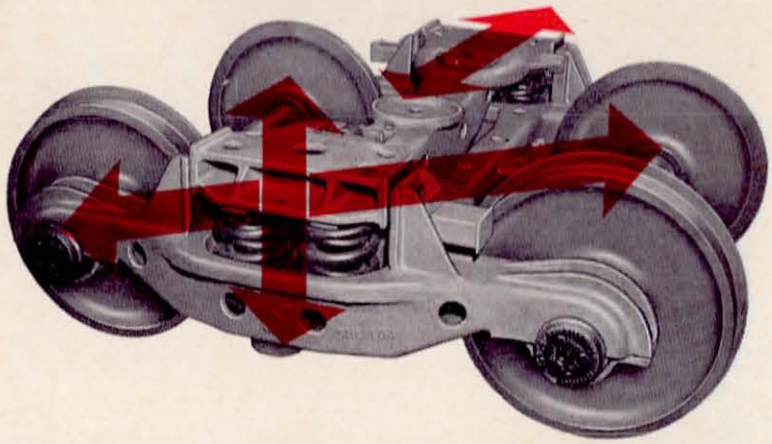

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Significant reductions in damage to lading and equipment have been achieved by the use of cushioning devices in freight cars. However, these devices cushion only in the longitudinal direction. Damage *also* occurs because of vertical and lateral forces. Conventional freight car trucks provide little or no cushioning against vertical and lateral forces.

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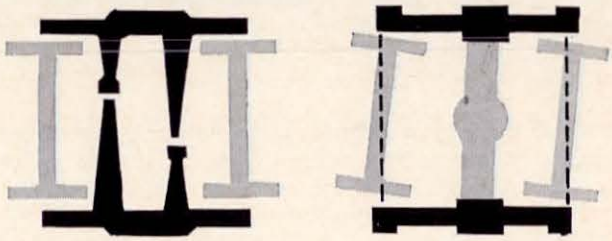
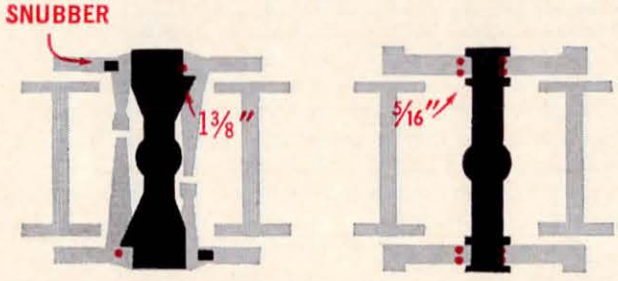
2. **AN EXCELLENT LATERAL RIDE.** The suspension design permits 1⅜" lateral displacement – *four times* that of the conventional freight car truck – with fewer wear points. The bolster spring design and snubbing arrangement converts this displacement into an easy, controlled lateral ride. Higher, wider spring location reduces sway and roll. Journal bearing design provides additional lateral, as well as vertical, cushioning.

3. **RIGID TRAM.** The ability of a truck to stay in tram significantly affects the ride and lading protection it provides. The unique Rockwell design features transoms integrally cast in side frames to form a rigid, horizontal frame, preventing the truck from skewing. This also reduces wear, which maintains ride qualities throughout the life of the truck. An important side benefit of this feature is the reduction in wheel wear.





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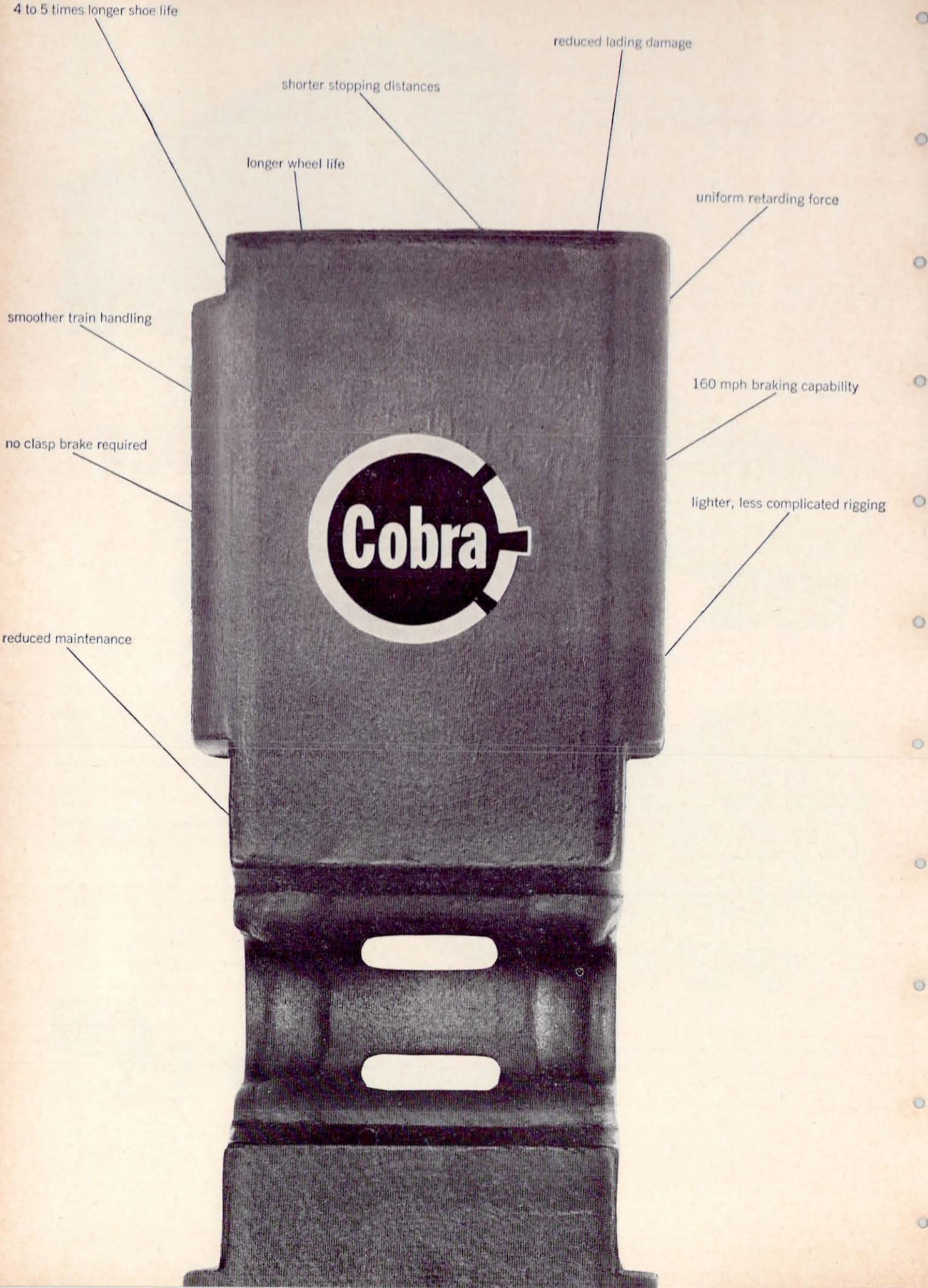
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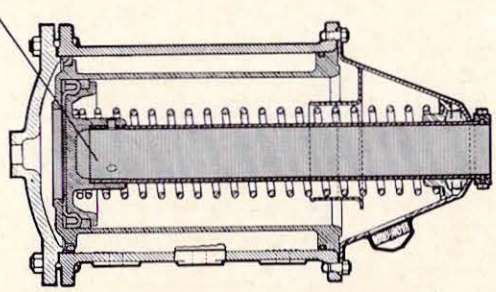

Railroad Friction Products Corporation, Wilmerding, Pa.

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LUTHER MILLER

AS THE EDITOR SEES IT

ONE INDUSTRY—OR 74?—Is there, in fact, a "railroad industry"—or do we simply have a loose confederation of 74 companies whose principal common bond is that they operate flanged-wheel vehicles over steel rails spaced 4 feet, 8½ inches apart? In view of the difficulty railroads sometimes have in charting an industry-wide course on common problems, the latter often seems to be the case, as A. Scheffer Lang suggested in Chicago last week.

THE VIEW FROM FRA—"What seems to be needed," said the Federal Railroad Administrator, "is a determination on the part of the railroad companies that they will solve their problems on an industry basis, instead of as individual companies. There are those in railroad management who say that their individual company cannot justify hiring the kind of staff and mounting the kind of effort required to solve some of its complicated problems. They then turn around and say, more by their actions than their words, that they cannot afford to support industry-wide efforts to get at these problems either. All this leaves me a little bit puzzled."

ONE WAY TO BEGIN—Whether Lang is entirely correct in his criticisms may not be so important as the fact that he believes he is—and that he reflects the thinking that prevails at DOT. And whether we like it or not, what DOT thinks is important. It seems to us that a logical first step (not only to unpuzzle DOT, but more importantly to unpuzzle the public about what the railroads are really doing) might be an industry-wide public relations effort, quite beyond the job already being done by the AAR. We further suggest that an excellent occasion for mounting this effort —literally, a once-in-a-century opportunity—will be provided by next year's Golden Spike Centennial Celebration.

SP AND UP SHOW THE WAY—It is already clear that the Southern Pacific and the Union Pacific, the railroads immediately involved, are going to seize the occasion to show their constituent publics a side of railroading that is a far and glad cry from the old choo-choo image. Can the SP-UP effort be extended coast to coast, border to border? Elsewhere in this issue, the president of the AAR offers a sensible argument for using Golden Spike Year as a platform from which railroads can truly, insofar as their public image is concerned, be launched into space-age orbit. Make no mistake about it—Golden Spike Year is going to produce national publicity for the railroads. Will it be cinders-and-smoke publicity — or can a professionally mounted campaign insure that railroads are portrayed as tomorrow's transportation—not yesterday's?

ACF gets more Center Flow cars

The ACF car fleet—which once consisted almost entirely of tank cars—is slowly beginning to change its character as more and more Center Flow covered hopper cars are added to the fleet.

ACF President Henry A. Correa told the Los Angeles Society of Financial Analysts that Center Flow cars are now being added at a faster rate than are tank cars, "opening the way to many new customers and ladings." He said the ACF fleet now totals approximately 28,000 cars, of which almost 20% are Center Flow covered hoppers.

"Our leasing business," said Correa, "should move ahead in fiscal 1969 at about the traditional pace despite any uncertainties in the general economy. This, of course, would result in a record year for our Shippers' Car Line Division, but then again each succeeding year nets an all-time record for this growing business, and no saturation point is yet in sight."

Correa said car builders are keeping their eye on railroad revenue ton miles as a key indicator for a turnaround in new orders. "A percentage increase of only a few points can trigger a dramatic swing in earnings for the railroads from rueful red to beautiful black. It should be kept in mind for now, however, that deliveries usually trail orders by 12 to 16 weeks."

He estimated that by 1975 the railroads' intercity freight traffic will increase by at least 25%.

● **ACF chairman on program.** John F. Burditt, ACF chairman, said the car-building business continues to be a highly cyclical one, with earnings per share for ACF at $2 last year, and expected earnings of $1 per share this year.

"The average return on our investment in this business, however, is highly satisfactory and more than compensates for its cyclicality," he added.

"Our goals for this division are to continue, through our research, to develop more, bigger and better special cars that will reduce ACF's vulnerability to cycles, and keep our capacity in line with average market demand. We are now meeting the first real test of this strategy, and we are earning money in our railroad car division, even in a year in which we expect to build only 8,000 cars against last year's 13.000. This is an excellent example of our ability in controlling costs." ■

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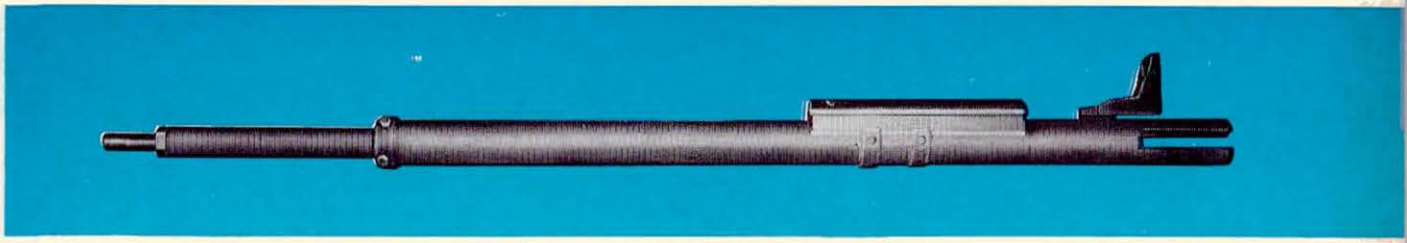

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DOT wants more time for HSGT study

Extension of the High Speed Ground Transportation Act for two years—until June 30, 1971—is being proposed by Secretary of Transportation Alan S. Boyd. The act authorizes surface-transportation research and demonstrations, first of the latter being the railroad passenger service project under way in the Northeast Corridor by D.O.T.'s Federal Railroad Administration in cooperation with Penn Central and New Haven.

The Boyd proposal is in the draft of a bill which the Secretary has submitted to Congress. In addition to the two-year extension, the bill would clarify the Secretary's authority to acquire sites and provide support for facilities necessary for carrying out activities authorized by the act.

The proposed clarification would amend the act to give the Secretary the specific authority to obtain sufficient rights in land for placing experimental trackage and to construct or furnish supporting facilities, such as maintenance buildings and equipment for servicing the test vehicles. "The current prohibition against acquiring any interest in any line of railroad would remain in full force," the D.O.T. explanation of the proposed legislation said.

Boyd submitted his bill to Congress with a letter that said the substantial progress has already been made in realizing objectives of the act, which was enacted in 1965. The letter went on to say that the proposed Northeast Corridor service would begin this spring, but Boyd has since said that he does not expect the service to begin until fall. About this proposed service, the Secretary also had this to say: "The development of new equipment which makes these greatly improved services, represents a partnership between the federal government, the railroads and the builders of rail passenger cars. The results of the demonstrations will help to identify the desires of travelers and thus will aid in determining what kind of systems need development for the future. The results will also indicate the extent to which rail passenger service may be relied on as basic transportation in urban corridors."

Boyd also argued that the need for HSGT programs is as great today as it was when those programs were authorized. ■

WALTER TAFT

WATCHING WASHINGTON

SAFETY BILL WORRIES RAILROADS—The railroads are concerned about the proposed Occupational Safety and Health Act sponsored by President Johnson. As now written, the bill (S.2864 in the Senate and H.R.14816 in the House) could give the Secretary of Labor regulatory authority over phases of railroad safety which are not regulated by other federal agencies. The Department of Transportation's Federal Railroad Administration is now the principal federal regulator of railroad safety, that role having been transferred to it from the ICC when DOT was organized last year.

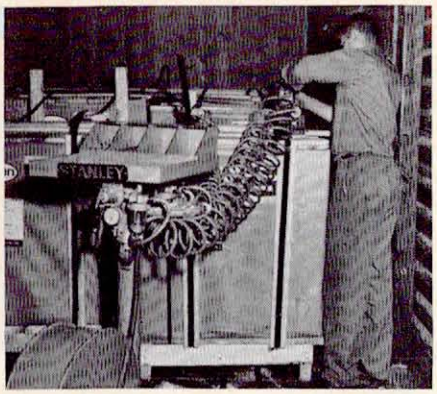
THE GAPS—The railroads' concern is that gaps not covered by FRA's authority would be occupied by the Secretary of Labor. FRA's present regulatory power covers, principally, inspection of locomotives, safety appliances on rolling stock, standards for signals and air brakes and investigation of accidents. So the gaps leave unregulated areas such as train-operating rules, construction and maintenance standards for roadway, including roadbeds, tracks, tunnels, bridges, stations and other right-of-way facilities.

HOPE FOR TIGHTER EXEMPTIONS—The railroad industry has made no presentation, thus far, at Congressional-committee hearings on the bill. Presumably, the industry's approach will become an undertaking to have Congress adopt tighter exemption provisions. The present exemption provisions do not exclude regulated industries and seem to contemplate filling present gaps in the safety phase of their regulation. The Secretary of Labor would be excluded only where "working conditions of employees" are subject to other federal regulation.

DOT WILL HAVE BILL—Also, the railroads anticipate that DOT will soon be proposing new and amended safety legislation to strengthen FRA's hand in this area. If they are to get new safety regulation, they may be expected to prefer FRA to the Secretary of Labor as its administrator. But they might, of course, oppose the DOT proposals, too.

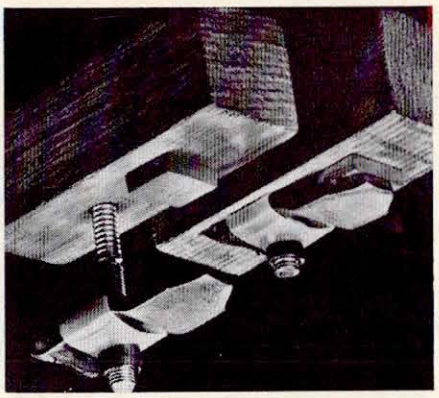
RLEA WANTS FOOT IN DOOR—Meanwhile, the Railway Labor Executives' Association is supporting the Administration bill. The Association's executive secretary, Donald S. Beattie, points out that the unions have been advocating extension of regulation to areas the Secretary of Labor could enter under the bill. RLEA bills to bring FRA into some of these areas have been pending in Congress for some time. Even if these bills were enacted, there would be gaps left for the Administration's bill to fill, Beattie says.

NEW PRODUCTS REPORT



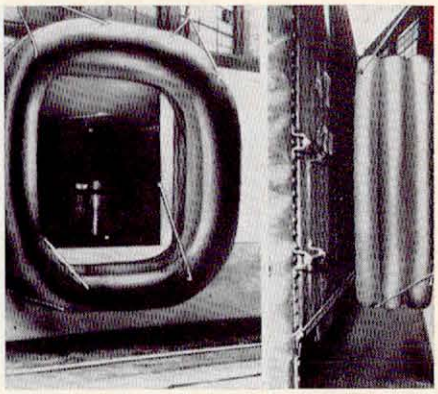
Strapping systems (RA-1)

A system used by a paper mill to load cars with two tiers of skids or rolls consists of mobile strap dispensers for pre-draping and a mobile tool car carrying two PHD pneumatic tighteners and a PHDS-2 pneumatic sealer. An overhead mobile compression strapping system used in the mill is suspended from a trolley and, when positioned above a wrapped skid, two men operate, simultaneously, four PTM combination tools which automatically tension, seal and shear. *Stanley Works.*



Floorclip (RA-2)

Precise placement of the offset on the sill or stringer of car or trailer-truck floor is made more positive with the EFD Universal Floorclip. The clip, with its adjustment of 5/8 in., compensates for misaligned holes, sills, or stringers and permits adjustment to get maximum engagement on underframe member. A retention band binds clip and collar to a protruding floor bolt while operator "stitches up" rest of floor. Installation is completed with a pulling tool. *Townsend Co.*



Dock seal (RA-3)

The Model "R" dock seal provides "a completely enclosed, draft-free passage-way" for loading/unloading operations. The neoprene-coated nylon seal with double-ply reinforcements is entirely supported by low-volume air pressure supplied by a weatherproof blower inside building. If struck by a lift truck when inflated, air is forced back through blower, leaving cover undamaged. When not in use, a flexible stretch cord lifts deflated enclosure out of door opening. *O'Neal Tarpaulin.*

Switching tractor (RA-4)

The Commando 50 switching tractor can spot the heaviest piggyback trailers. It incorporates many developments to increase driver efficiency and comfort, make maneuvering faster and easier, and is said to be capable of handling a 100,000-lb load. The tractor is powered by a heavy-duty Ford industrial V-8 engine. The rated horsepower is 275. The extra-heavy-duty fifth wheel has two double-acting hydraulic lift cylinders. *Ottawa Steel Products.*

Extendable conveyors (RA-5)

Extendable belt conveyors for loading and unloading highway trailers extend up to 37 ft from their bases on cantilevers and reach normally inaccessible areas. They can be powered for traverse movement on rails at 30 fpm to serve multiple storage bays or docks. Fully retracted, base length of 3-boom unit is 18 ft 6 in.; 2-boom unit, 26 ft 4 in. Height of traverse unit is 38 in. Belt speed is 85 fpm; boom extension speed, 40 fpm. *Rapistan.*

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Bonded rubber mountings for rail-car compressors, introduced by Lord in 1927, proved the effectiveness of elastomers in protecting auxiliary equipment from vibration.

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Dyna-deck® systems for flat cars soften longitudinal impact, absorb side shock, damp vertical vibration. In rugged service, they protect lading and superstructure.

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Lord's elastomeric traction-motor nose supports, a breakthrough in 1956, are now standard among locomotive builders. Benefits: positive cushion against torque impulse, decreased wheel slip, minimal spark and flash-over, reduced maintenance, longer component life.

Pampering piggybacks

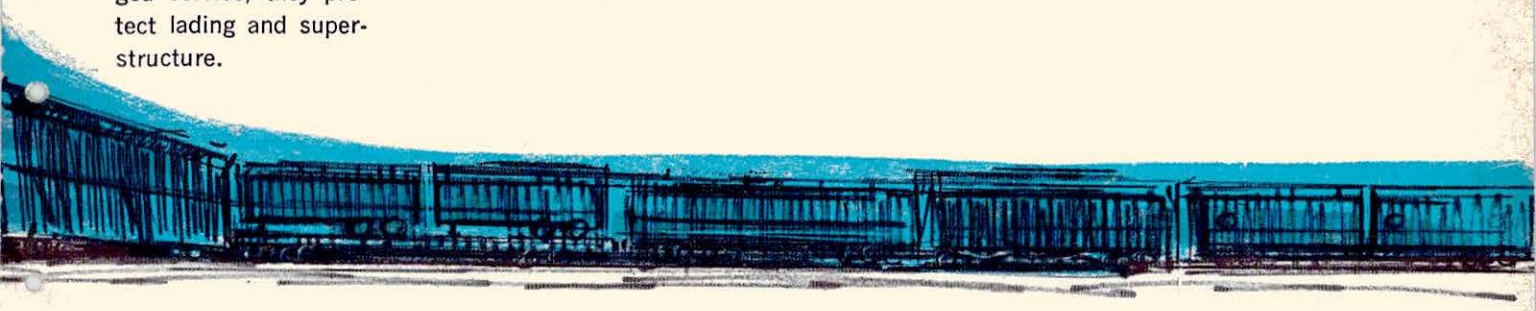
Bonded rubber mountings (16 per car) anchor rub-rails to center sills to provide resilient deflection fore and aft. And Lord mountings for trailer hitches accommodate multi-directional shock and vibration, let piggyback units "roll with the punch."

Structural flexibility

Lord know-how in elastomers produced mountings for all-door box cars that allow end walls to move relative to the roof as a result of floor deflections. The system also protects roof from severe in-transit impacts.

Driveline shock control

Flexible couplings, custom-designed by Lord, transmit smooth power to auxiliary equipment: generators, fans, pumps, compressors. Bonded rubber isolates torsional vibration and shock, accommodates misalignment, eliminates lubrication.



More tomorrow

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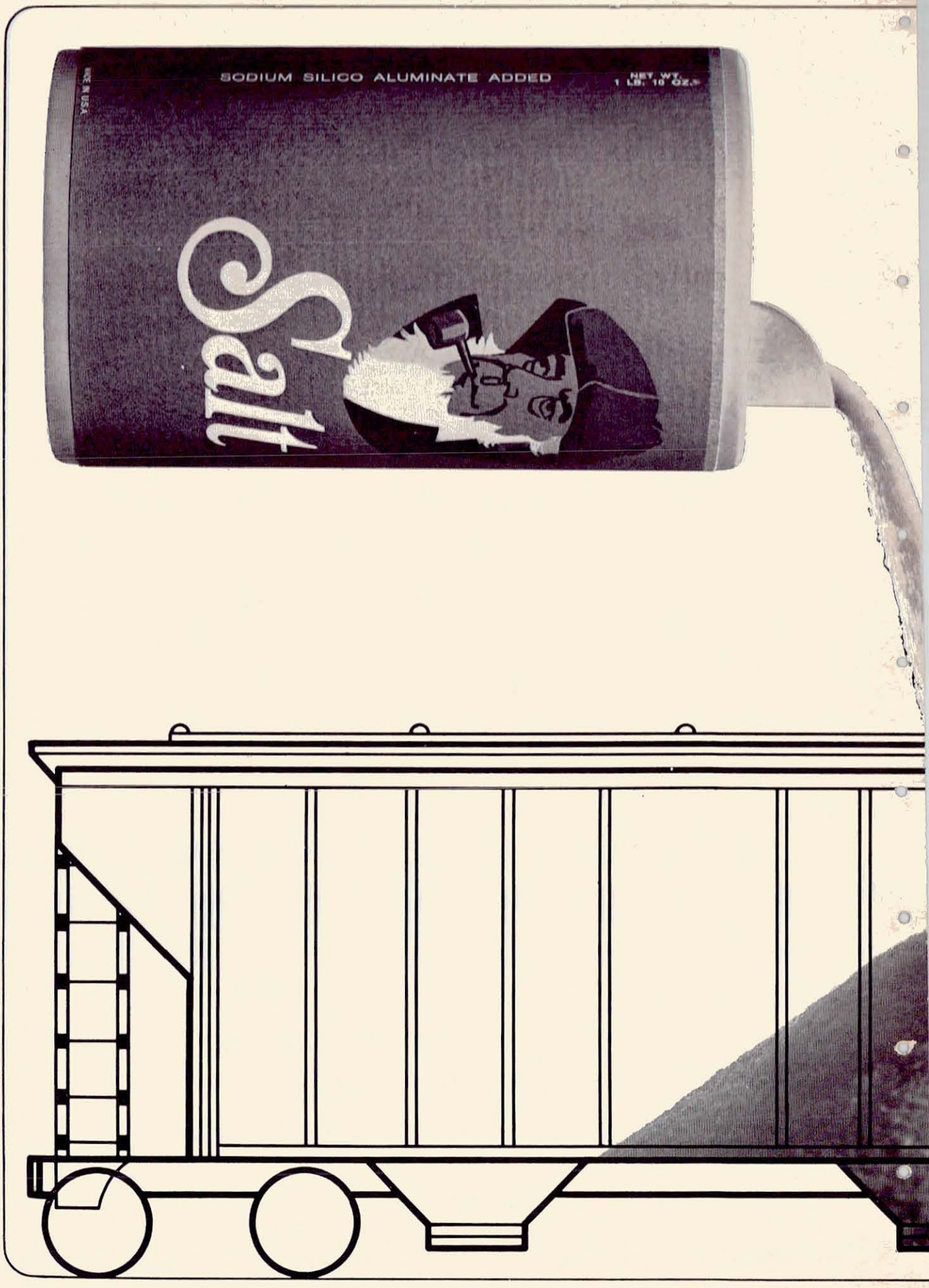
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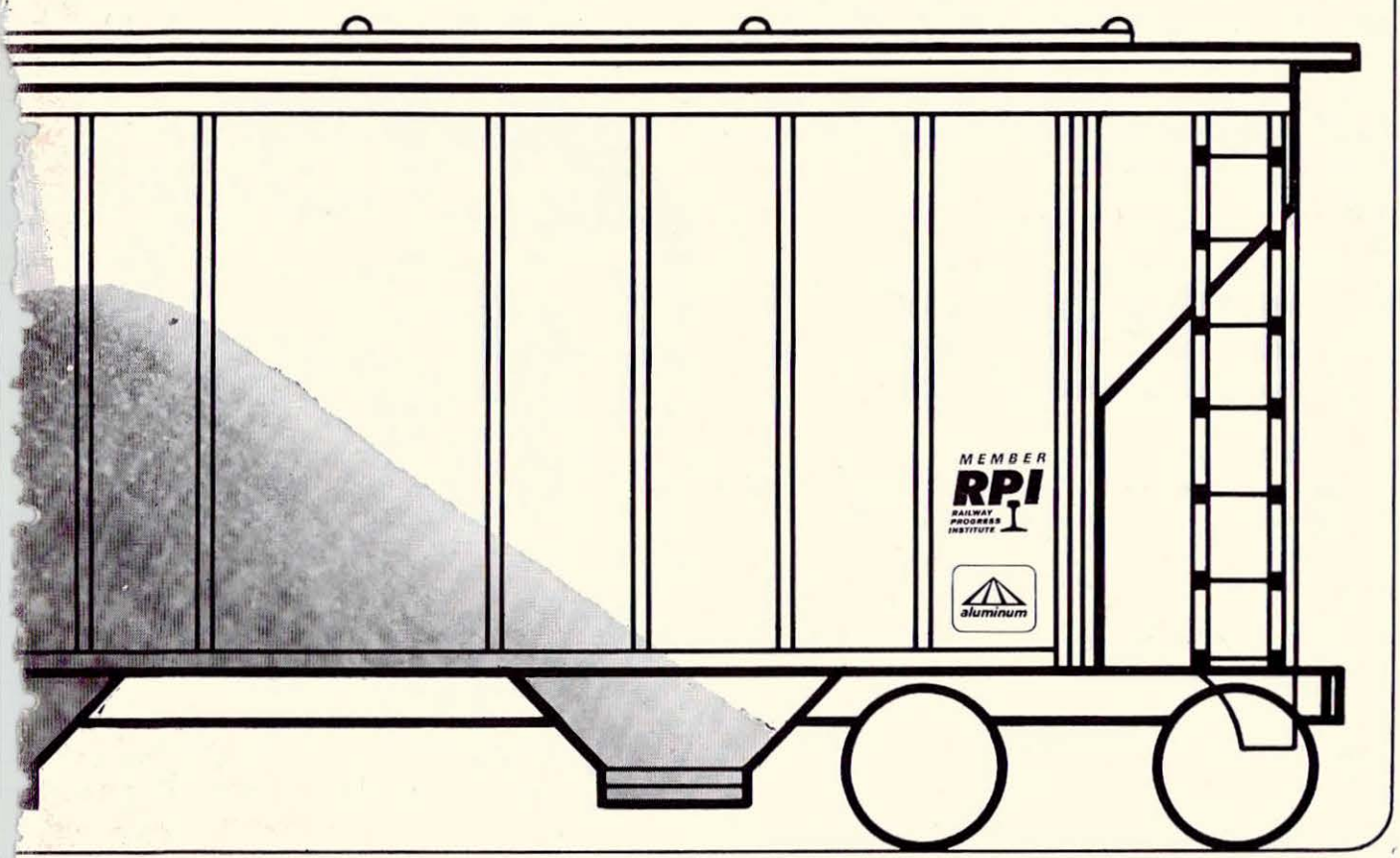

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PEOPLE IN THE NEWS

BELT OF CHICAGO.—Joseph Chester, assistant to vice president and assistant general manager, also named office manager, assistant secretary and assistant treasurer, to replace **Cyrus J. Sokel,** who retires Mar. 31 after more than 46 years' service. **Robert E. Feeley,** chief of police, named director of special services. Mr. Feeley will continue to head the police department and will also be responsible for safety and loss and damage prevention.

BURLINGTON.—Francis J. Dillon, director of computer systems and planning, named to the newly created position of director, management information services. **William P. Murphy, Jr.,** plans and procedures accountant, succeeds Mr. Dillon. **Arthur E. Pew III,** director, data processing, becomes director, data control. **Donald J. O'Brien,** manager, computer systems and planning, replaces Mr. Pew, and in turn is replaced by **Robert M. Brydges,** junior systems analyst.

CHICAGO & EASTERN ILLINOIS.—Edward R. Hopkins named assistant manager-piggyback sales, Chicago.

DETROIT & TOLEDO SHORE LINE.—E. L. Marks, Sr., appointed chief engineer, Monroe, Mich., succeeding **H. C. Wertenberger,** retired.

GREAT NORTHERN.—Glenn R. Ekers, industrial engineer in the operations department, named equipment planning specialist, marketing department.

JERSEY CENTRAL.—The following appointments were made in the freight traffic department: **Bernard J. Strongin,** division freight agent, Elizabeth; **Walter C. McCaffrey,** general agent, New York; **Churchill Thompson,** assistant general freight agent—sales and service, Newark; **George J. Kochmar,** district freight agent, New York and **Patrick T. Murphy, Jr.,** district freight agent, Elizabeth.

LONG ISLAND.—William C. Mallery, public relations representative, Jamaica, N.Y., appointed director of public relations.

MISSOURI-KANSAS-TEXAS.—Raymond E. Wille named assistant sales manager, Chicago. **Richard M. Rossini** appointed sales representative, Chicago.

NEW YORK, SUSQUEHANNA & WESTERN.—Herbert J. Draney, president, Edgewater, N.J., retired Feb. 29, after 47 years of service. **William A. Logan,** secretary-treasurer, elected president and will continue as treasurer. **Catherine A. Lyons,** assistant secretary, elected secretary. **J. D. Kerwin,** comptroller, additionally appointed assistant secretary.

Raymond T. Hordern, general freight agent, elected vice president—traffic, succeeding **Thomas B. Dwyer,** who retired Feb. 29.

PENN CENTRAL.—Harold P. Morgan, assistant general manager, Eastern Region, Philadelphia, Pennsylvania, appointed assistant to president.

Harold P. Morgan
PC

J. A. Stanley Jr.
SCL

Robert H. Seeman, shop superintendent, Collinwood diesel terminal, Cleveland, named shop manager, Conway, Pa., enginehouse, succeeding **Howard L. Kraner,** transferred to the office of the regional mechanical officer, Pittsburgh.

SEABOARD COAST LINE.—Josiah A. Stanley, Jr., assistant vice president, Richmond, Va., elected comptroller, Jacksonville, Fla., succeeding **Ernest A. Anderson,** retired after nearly 50 years railroad service, mostly with the Atlantic Coast Line.

SOUTHERN.—Challen E. Caskie, assistant to vice president—sales, Washington, appointed to the newly created post of assistant to vice president—industrial development, Richmond, Va.

Harold C. Mauney, Jr., district sales manager, Rail-Highway Services, appointed assistant to director, Rail-Highway Services, remaining at Atlanta, Ga.

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(RA 3/25)

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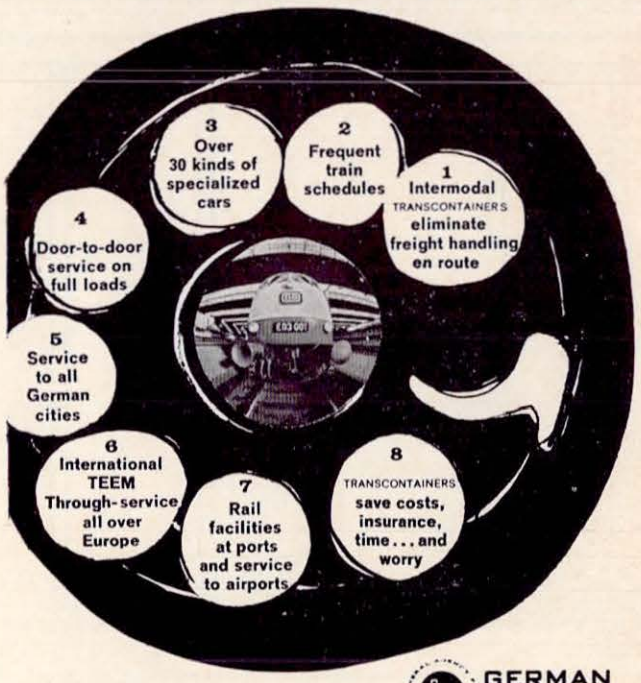
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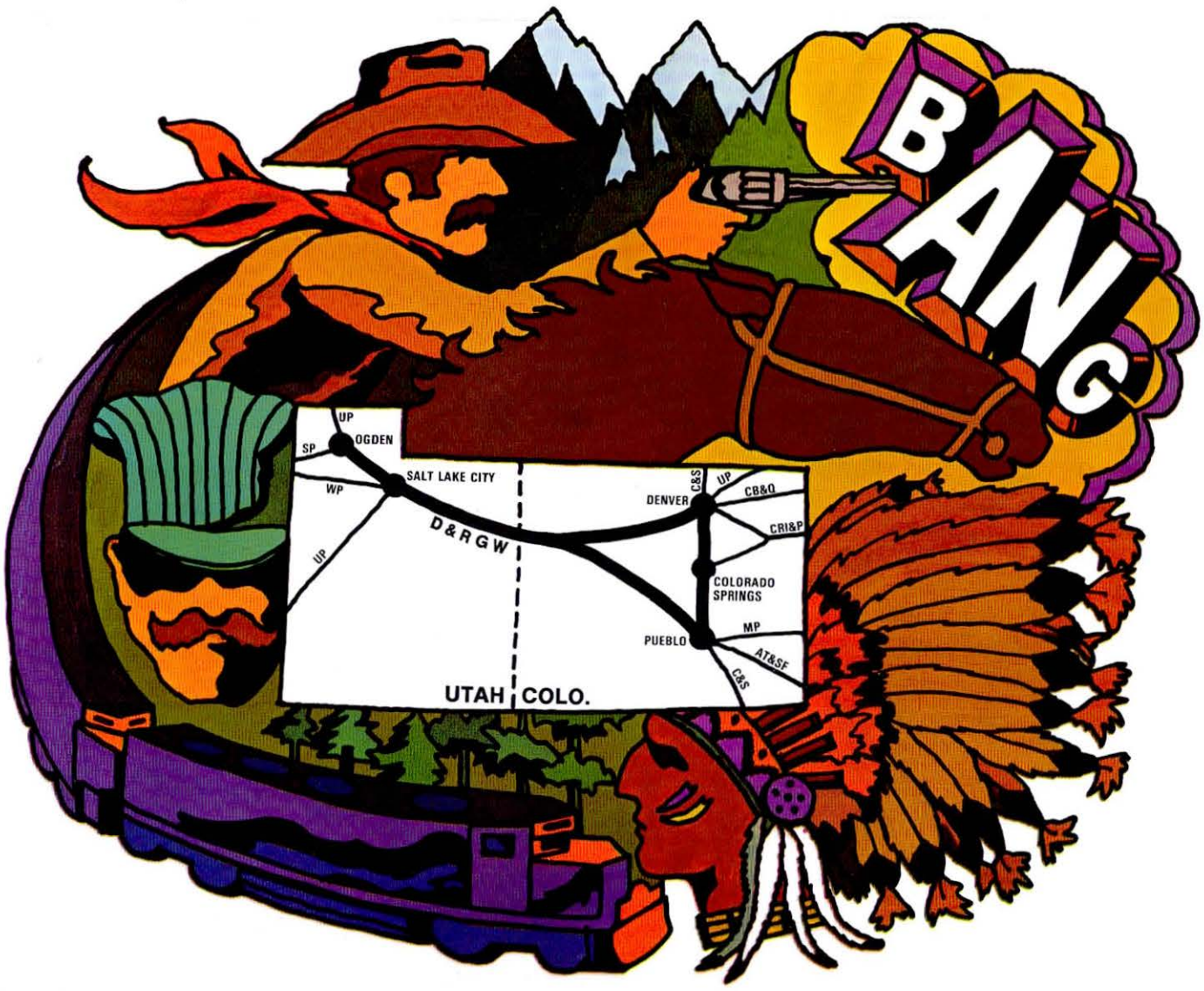
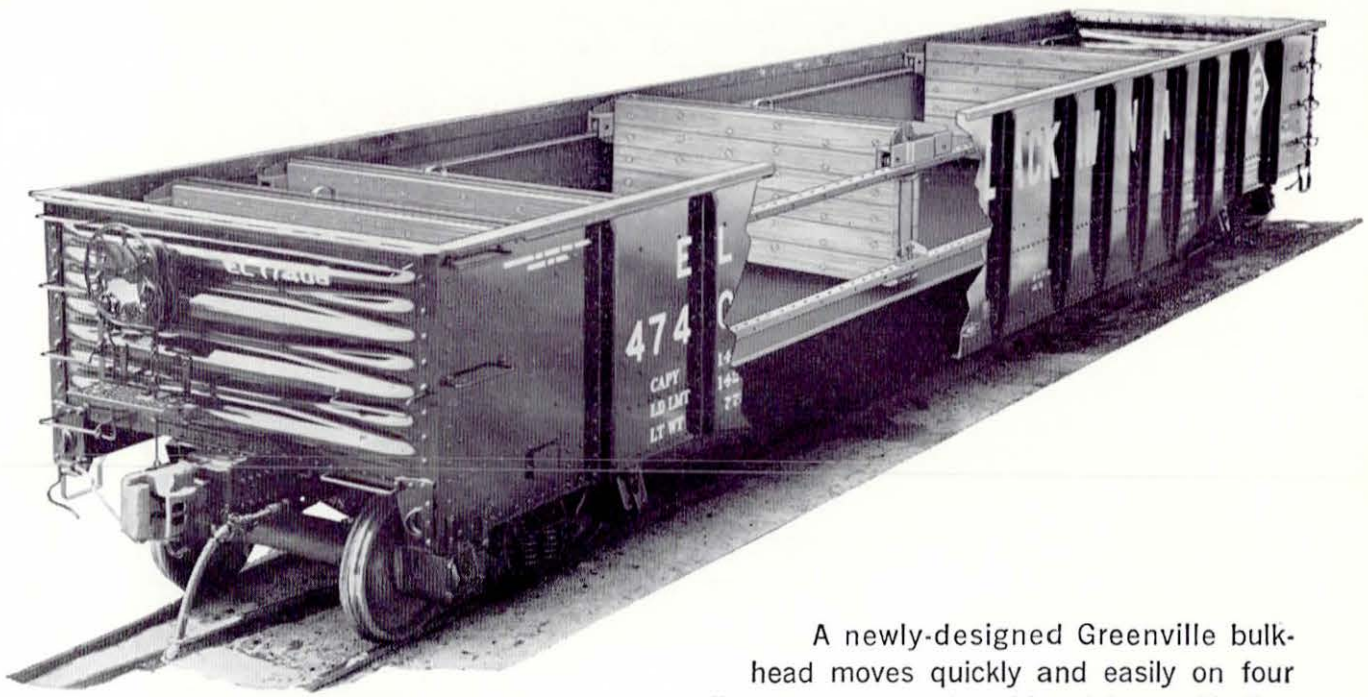


New bulkheads minimize binding and swinging



A newly-designed Greenville bulkhead moves quickly and easily on four rollers and two tracks with minimum binding and swinging. It can be positioned against the load easily by hand. These new units lock in place at 1″ intervals and allow for plus or minus 1″ from the nominal width of the car. The efficient, clean, Greenville design is strong and foolproof. Bulkheads are faced with 3/16″ steel sheets. If desired, steel sheets can be faced with 2¼″ oak planks which absorb shock and further protect lading. The new bulkheads can add greatly to the versatility of your gondolas. Get the facts on them today from Greenville.

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If poor insulation is robbing you of the savings of

read how rigid urethane foam can get you back on the profit track

High insulating ability adds payload space for any cargo—refrigerated or unrefrigerated. Twice as efficient as any other insulating material, urethane foam can be used at half the thickness of any other insulating material to maintain predetermined levels of insulating efficiency. Less space for insulation means more space for cargo.

Increases structural strength: Urethane foam adds strength and rigidity to metal, plastic, wood, paper—i.e., just about any material used to form a container. In fact, urethane often permits a reduction in the thickness of these skin materials to cut costs, reduce weight.

Moisture resistance: Millions of closed cells per square inch let rigid urethane foam seal out moisture, retain its high insulating ability, strength and rigidity indefinitely. Even if punctured, only those cells receiving the full impact are damaged. The remainder continue in service unimpaired.

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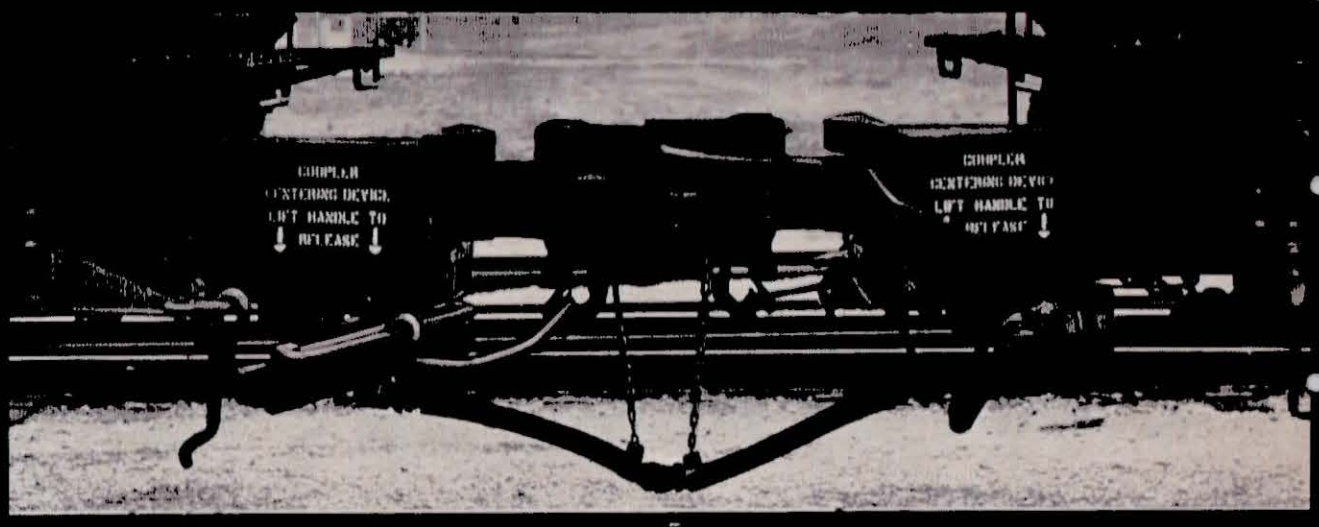
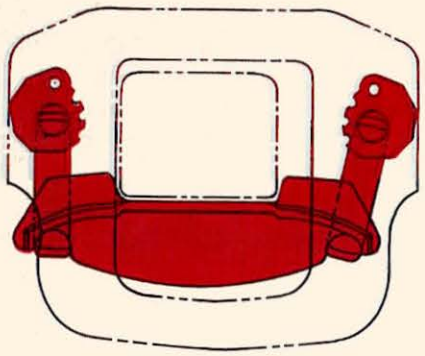


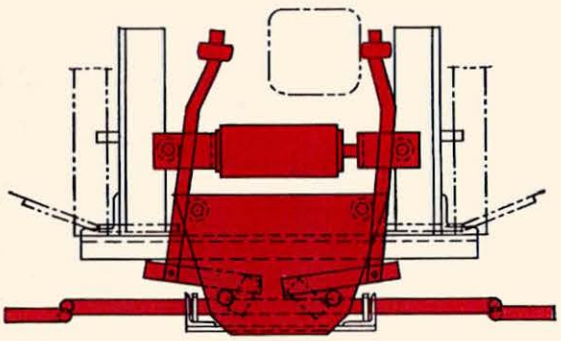
Reduce car damage with these Standard Coupler Centering Devices

By keeping a free coupler centered in relation to the end sill, they minimize the damage brought on by the passing of couplers.

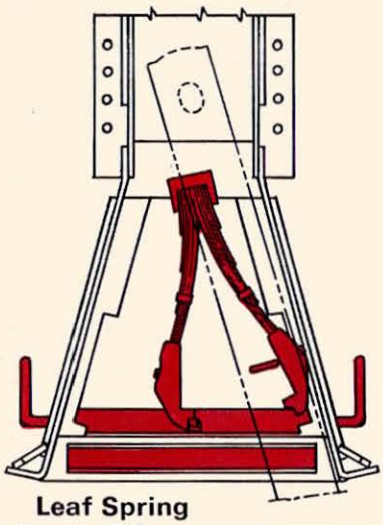
A Complete Family of Standard Centering Devices to Meet All Car Conditions



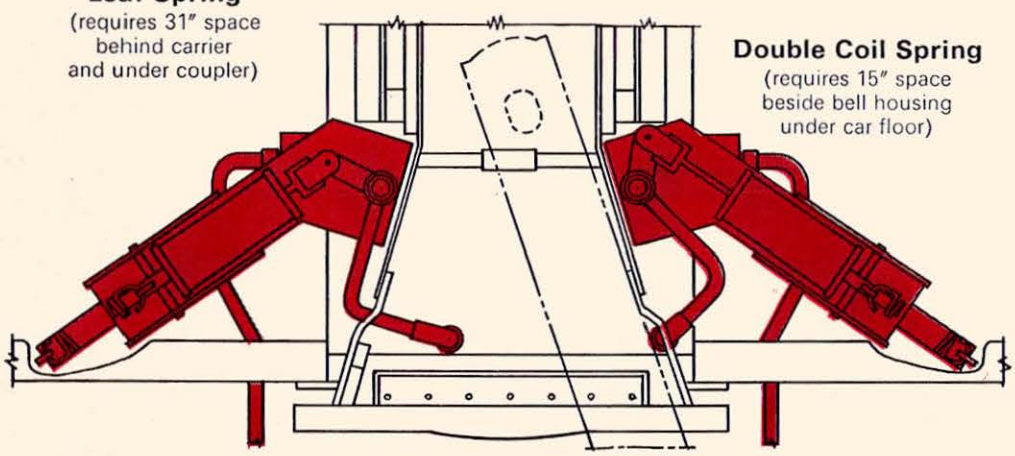
Swing Type
(includes carrier)



Single Coil Spring
(requires 6″ space
behind carrier and under coupler)



Leaf Spring
(requires 31″ space
behind carrier
and under coupler)



Double Coil Spring
(requires 15″ space
beside bell housing
under car floor)

Today's longer freight cars, with their long-shank couplers and wide-opening strikers, have required new centering device designs to meet the many car conditions. These new designs afford the same protection from damage that the Standard Centering Device has provided for many years—protection that is even more important with today's wide-swing couplers.

With a Standard Coupler Centering Device, the risk of passing couplers is reduced to a minimum. The device keeps a free coupler centered in relation to the end sill. If the coupler is swung wide when disengaged from another, the device instantly returns it to center position.

When the coupler is coupled to another car, the centering device permits all movements essential to safe operation . . . sideways, and up and down.

In using a wide-swing coupler device, there will be occasions when coupler alignment requires that a free coupler be moved off center. If so, a pull on the handle releases the centering device. As the cars move, and the coupler returns to center position, the device automatically re-engages.

Standard Coupler Centering Devices are supplied in four to six components, together with all necessary hardware and simple instructions for installing.

The choice of designs will hinge upon your particular application. Your Standard representative will be glad to recommend the best choice for the job at hand—and to answer any questions you may have.

STANDARD RAILWAY EQUIPMENT
division of STANRAY CORPORATION
Hammond, Indiana • Chicago

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Circle 33 on reader service coupon

"If there's a way the I.C. can increase your profits, you can bet BRAINFARE will find it."

William B. Johnson, President, Illinois Central Railroad

We're well aware these days that our customers are taking a hard look at their distribution costs. That's only right. For saving on distribution is one of the few areas left for a company to improve its profits.

When our customers take that hard look, they'll see a new Illinois Central. We've invested big in computerized facilities, hired outstanding specialists for our staff. We call this combination of electronic and human brains BRAINFARE. And BRAINFARE has chalked up some significant gains already—cut empty car miles, moved cars through yards fast, pushed shipments to destinations faster.

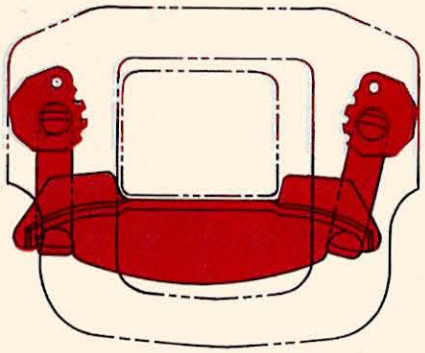
Rent-a-Train is a BRAINFARE brainchild. The Department of Transportation calls this new concept "a significant breakthrough in volume rate-making to the mutual benefit of both railroad and shipper."

If this be enlightened self-interest, we invite you to make the most of it.

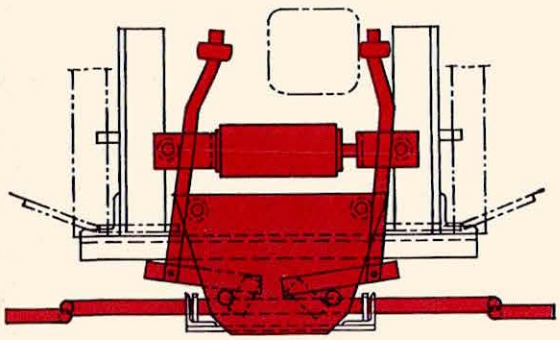
Main Line of Mid-America **ILLINOIS CENTRAL RAILROAD**

Circle 51 on reader service coupon

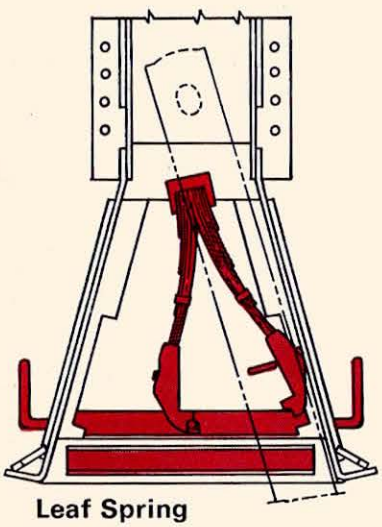
A Complete Family of Standard Centering Devices to Meet All Car Conditions



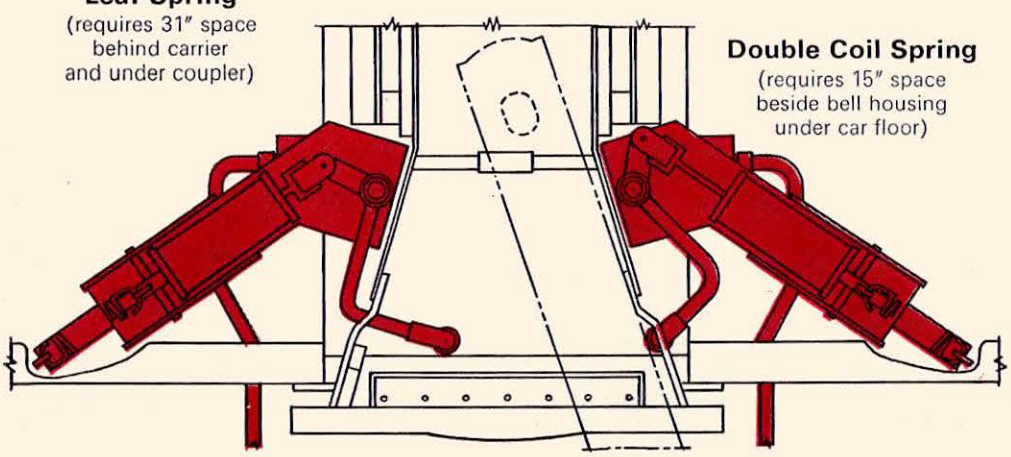
Swing Type
(includes carrier)



Single Coil Spring
(requires 6" space
behind carrier and under coupler)



Leaf Spring
(requires 31" space
behind carrier
and under coupler)



Double Coil Spring
(requires 15" space
beside bell housing
under car floor)

Today's longer freight cars, with their long-shank couplers and wide-opening strikers, have required new centering device designs to meet the many car conditions. These new designs afford the same protection from damage that the Standard Centering Device has provided for many years—protection that is even more important with today's wide-swing couplers.

With a Standard Coupler Centering Device, the risk of passing couplers is reduced to a minimum. The device keeps a free coupler centered in relation to the end sill. If the coupler is swung wide when disengaged from another, the device instantly returns it to center position.

When the coupler is coupled to another car, the centering device permits all movements essential to safe operation . . . sideways, and up and down.

In using a wide-swing coupler device, there will be occasions when coupler alignment requires that a free coupler be moved off center. If so, a pull on the handle releases the centering device. As the cars move, and the coupler returns to center position, the device automatically re-engages.

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STANDARD RAILWAY EQUIPMENT
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SUPPLY TRADE

Adrian A. Walker and **Robert H. Watts** have been appointed railroad representatives, **Daubert Chemical Co.**, Oak Brook, Ill.

Norman M. Johnson has been appointed assistant vice president—manufacturing and development, **Cardwell Westinghouse Co.**, Chicago.

William F. Morrison has been named manager—rubber and plastic cables, **Anaconda Wire & Cable Co.**, Marion, Ind.

P. H. Yorke, district manager, **Edgewater Steel Co.**, St. Louis, has been appointed district manager, Chicago, succeeding **D. W. Odiorne,** retired.

Railway Track-Work Co., Philadelphia, Pa., has announced the following appointments: **George W. Barrett,** president and chief executive officer; **Bernard E. Carey,** vice president-sales; **James Stuhl,** secretary and assistant treasurer; and **Edward T. Stuhl,** vice president—purchases. **William D. Hoffman,** former president, will continue with the company as general manager and business consultant. Mr. Barrett was formerly vice president; Mr. Carey, sales and service engineer; James Stuhl, office manager and Edward Stuhl, parts manager.

C. William Woods, manager advanced development, **Signal & Communications Division of Westinghouse Air Brake Co.**, Pittsburgh, has been appointed manager, customer service and order planning.

Charles A. O'Brien, assistant superintendent transportation—traffic manager, Midwest Steel Division, **National Steel Corp.**, has been named midwest regional manager, Transportation Products Division, Chicago.

Oswald S. Laing, district sales manager, Minneapolis-St. Paul office, Transportation Products Division, has been appointed western regional manager for that division at Minneapolis. Mr. Laing will be responsible for all sales in the western portion of the United States.

Dick Pierce has been named advertising manager, **Parker Seal Co.**, Culver City, Calif., replacing **Ben Looney,** named a territory manager in the Texas-Oklahoma area.

Robert E. Mann has been appointed associate representative with **Marvin Wolfe** for **Davis Brake Beam Co.**, Chicago Office. Effective April 1, the new address is 222 West Adams Street, Chicago 60606.

R. H. Townsend has been named car systems project manager, **Vapor Corp.** He was formerly associated with **Canadian Vickers. James E. Condon,** project engineer for Vapor's Technical Services Section, has become sales engineer, New York area. **Ralph Chiarappa,** chief test engineer, has been advanced to supervisor of field services for all products of the Railroad and Transit Division.

M. J. Fabian has been appointed chief maintenance officer **Tank Car division** of **General American Transportation Corp.** Mr. Fabian, who was assistant chief maintenance officer, succeeds **V. C. McMullen,** who has retired after 41 years' service.

INDUSTRIAL TRAFFIC

James M. Beggs has been named director of purchases and traffic, **Westinghouse Electric Corp.**, Pittsburgh, succeeding **Dale C. Weisenstein,** who is attending an advanced business management course, Harvard Graduate School of Business Administration. Mr. Beggs was formerly general manager, surface division, Baltimore.

Raymond C. Burke has been appointed director of transportation, distribution and market research, **Missouri Beef Packers, Inc.**, Rock Port, Mo. He was formerly traffic manager—marketing manager, **Burlington,** Chicago.

Robert P. Hohnstein has been appointed general traffic manager, **Essex Wire Corp.**, Fort Wayne, Ind. He was formerly traffic office manager.

Charles Obsusin, assistant general traffic manager, **Tenneco Chemicals, Inc.**, New York, has been promoted to general traffic manager.

Leonard J. Zane, traffic representative, Atomic Power Divisions, **Westinghouse Electric Corp.**, Pittsburgh, has been appointed manager of transportation of those divisions.

Paul F. Hanafin, has been appointed traffic assistant, **Riegel Paper Corp.**, New York.

Michael F. Ryan has been named vice president-sales, **Genex Terminal Co.**, Chicago.

OBITUARY

William A. Keeton, eastern sales representative for **FreightMaster,** a division of **Halliburton Co.**, with headquarters at Philadelphia, and formerly associated with the **Pennsylvania** and the **Paragon Bridge & Steel Co.**, died March 9 in Moorestown, N.J.

E. W. Taylor, manager of industrial sales, **American Hoist & Derrick Co.**, St. Paul, Minn., died March 12.

WE'RE 3 STEPS AWAY FROM SEALING A BARGAIN:

1 Lock two of your flat cargo seals and send them to us:

The Tyden Corporation
1 Industrial Park Road
Hastings, Mich. 49058

2 We'll unlock them, twist the bands, relock and return them. Except for the twisted bands, you'll swear they haven't been touched.

3 We'll also include two Tyden Seals. Send them to your flat seal supplier and see how he does.

Circle 26 on reader service coupon

IMPACT PROTECTION

for your cars and ladings

MARK H-60

MARK H-100

CARDWELL WESTINGHOUSE *hydraulic-friction* DRAFT GEARS

The Westinghouse Mark H-60 and the Mark H-100 Draft Gears combine hydraulics and friction to provide superior impact protection for your cars and ladings. The velocity-sensitive hydraulic mechanism automatically adjusts itself to impacts with heavy or light loads, high or low velocities. At the same time, the sill force is kept within safe limits. In service since 1963, performance results are excellent!

The Mark H-60 fits all cars having the new standard 17-3/4-inch striker and 24-5/8-inch pocket, travel 3-1/4-inches. The Mark H-100 fits the alternate standard A.A.R. 36-inch pocket using an alternate standard 25-inch coupler, travel 4-3/4-inches.

For superior impact protection for your cars and ladings, Specify Mark H-60 or Mark H-100!

CARDWELL WESTINGHOUSE COMPANY

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INTERNATIONAL DIVISION SAME ADDRESS

CANADIAN CARDWELL CO. LTD., MONTREAL 2, QUEBEC

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"If there's a way the I.C. can increase your profits, you can bet BRAINFARE will find it."

William B. Johnson, President, Illinois Central Railroad

We're well aware these days that our customers are taking a hard look at their distribution costs. That's only right. For saving on distribution is one of the few areas left for a company to improve its profits.

When our customers take that hard look, they'll see a new Illinois Central. We've invested big in computerized facilities, hired outstanding specialists for our staff. We call this combination of electronic and human brains BRAINFARE. And BRAINFARE has chalked up some significant gains already—cut empty car miles, moved cars through yards fast, pushed shipments to destinations faster.

Rent-a-Train is a BRAINFARE brainchild. The Department of Transportation calls this new concept "a significant breakthrough in volume rate-making to the mutual benefit of both railroad and shipper."

If this be enlightened self-interest, we invite you to make the most of it.

Main Line of Mid-America **ILLINOIS CENTRAL RAILROAD**

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RSP CAR REPAIR SERVICE

RSP

When the old girl's been in an accident or is in need of a face lift, we show her all the affection and care she deserves. For a good, quick repair job, call "Bear" Slone.

RSP RAILWAY EQUIPMENT CORP.

ROSCOE, TEXAS 79545 • TELEPHONE (915) 766-3427

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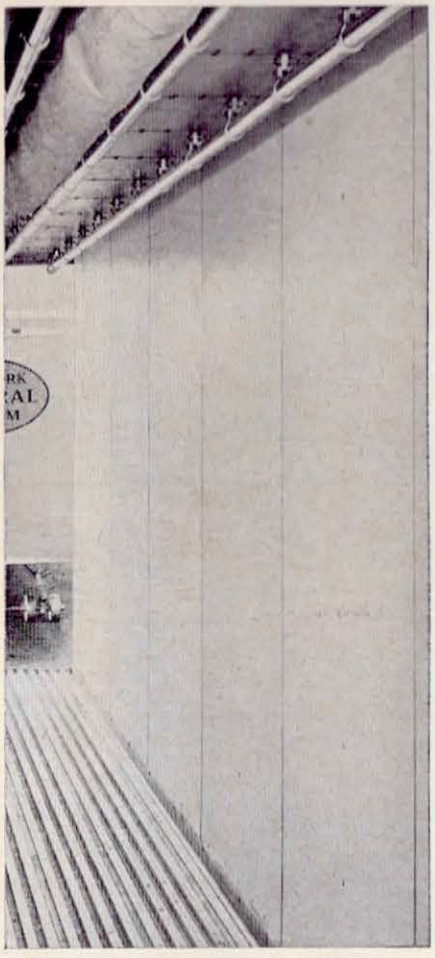
GLASBORD® Liner SERVES TWO MASTERS



1. SHIPPERS !

Protects YOUR cargo

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Keeps YOUR units in service

High strength, light weight GLASBORD is the best liner for piggyback reefer trailers and containers. ACCEPTED BY M.I.D.

Write for samples and literature kemlite

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"Waffle" cars offer built-in DF features

Although they look as though they had been stamped out in huge waffle irons, the 40 50½-foot, 70-ton cushioned box cars recently placed in service by the Seaboard Coast Line have interiors designed to approach the smoothness of a pancake.

Called "waffle-side" box cars by their builder, Pullman-Standard, the new additions to the SCL car fleet achieve their relatively smooth interiors in spite of the presence of load-restraining devices and the absence of side linings.

• **Low-maintenance goal.** The P-S design for the single-sheathed cars with the embossed sides was developed when the SCL, following highly successful performance of its own prototype, expressed a desire for an all-purpose box car with high service versatility, yet with low maintenance characteristics.

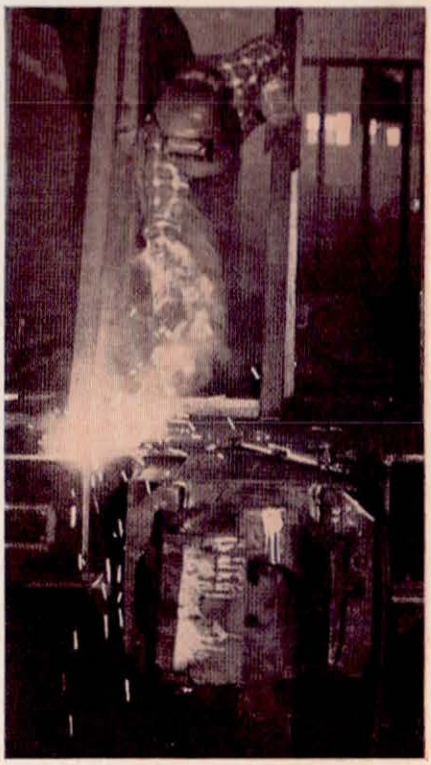
What the SCL wanted was a car with such shipper-attracting features as smooth interiors, load-restraining devices, cushioned underframe, and wide side doors. At the same time, SCL officers, especially those in the mechanical department, felt that elimination of side linings would greatly reduce the amount of time the cars would spend undergoing repairs. In effect, they wanted an XL-rated car, but they didn't want the side linings which would normally accompany this rating.

This restriction to the use of single-sheathed construction in wrapping up the high versatility and low maintenance combination into one neat package led to Pullman's concept of the waffle side car. This side construction features vertical outside side posts and horizontal pressings in the side sheets between the posts. It not only led to the selection of the name "waffle side" for the car, but also qualified it for the desired XL classification.

To gain the relative smoothness in the waffle-side cars' interiors, the load-restraining devices—Evans DF-2 belt rails (four per car), cut in short 26-in. sections—are welded into the horizontal indentations and do not protrude beyond the plane of the interior surfaces. Likewise, the full-length P-S lading anchors, located at each of the 20 side posts and at the door posts, are flush with the sides.

• **Forest-products loads.** The 400

(Continued on page 88)



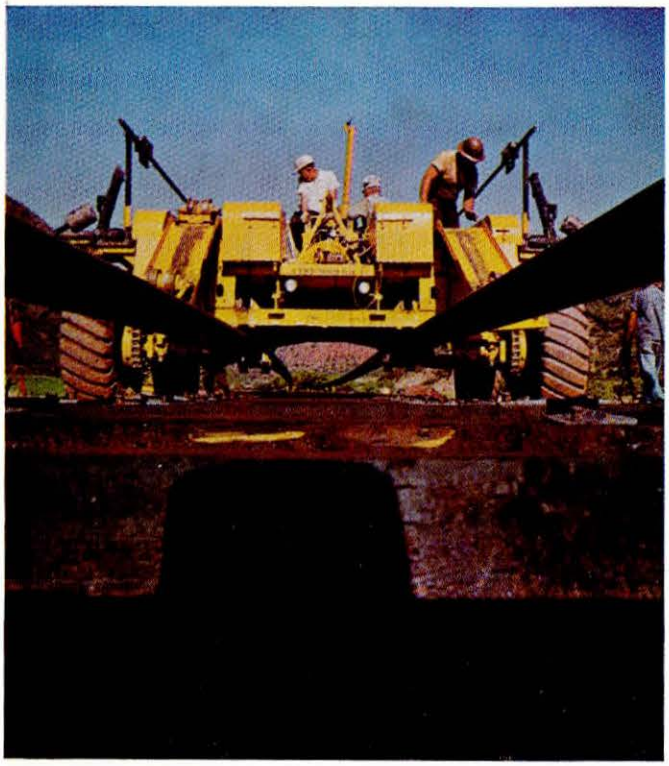
Frame It

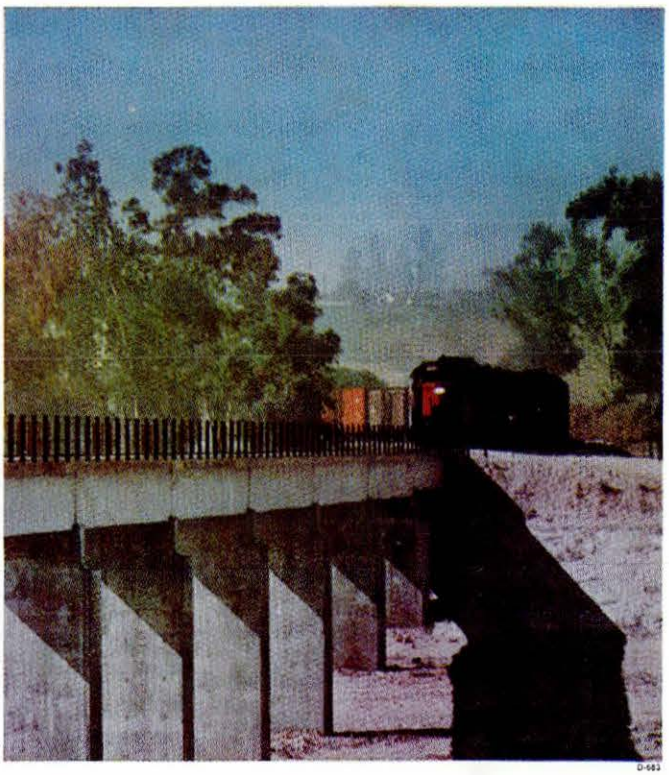
...with CF&I Car Structurals

New larger capacity special design cars of the future will require strong steel ribs to hold their hefty cargoes. That's where CF&I Structurals come into the picture. Designed to meet a wide variety of structural stresses, CF&I Structurals come in a large assortment of sizes and shapes. And, they're available in standard ASTM specifications, in a full range of standard AISI carbon chemistry grades. For the jobs ahead, move ahead with CF&I.

Circle 39 on reader service coupon

Let's "steel" a look into the future of railroading. **New car designs to frame, more rivers and canyons to tame, and many miles of track to be laid for modern high speed trains. CF&I is looking ahead towards even greater teamwork with the railroad industry accomplished through CF&I "Service in Steel."**





Thread It

...with CF&I Rails

Weld CF&I's rails into 1440 foot lengths. Thread over a quarter mile of track at a whack. Then, put it to the test with fast modern trains. CF&I's rails have been designed to take greater loads and the higher speeds of modern railroading. High silicon composition makes CF&I Hi-Si rails stronger to last longer. Just one more way CF&I works towards developing steel products for your progressive railroad growth.

Tame It

...with CF&I Prestressing Strand

Mighty rivers, gaping canyons, deep crevasses tame easily with prestressed concrete bridges. And it doesn't take long. CF&I stress-relieved strands help strip precious time off construction. But, add to the long life of a span. Assure dependability with the greater strength and durability of prestressed concrete. If you're out to tame some tough land, use a tough and proven product... CF&I prestressing strand.

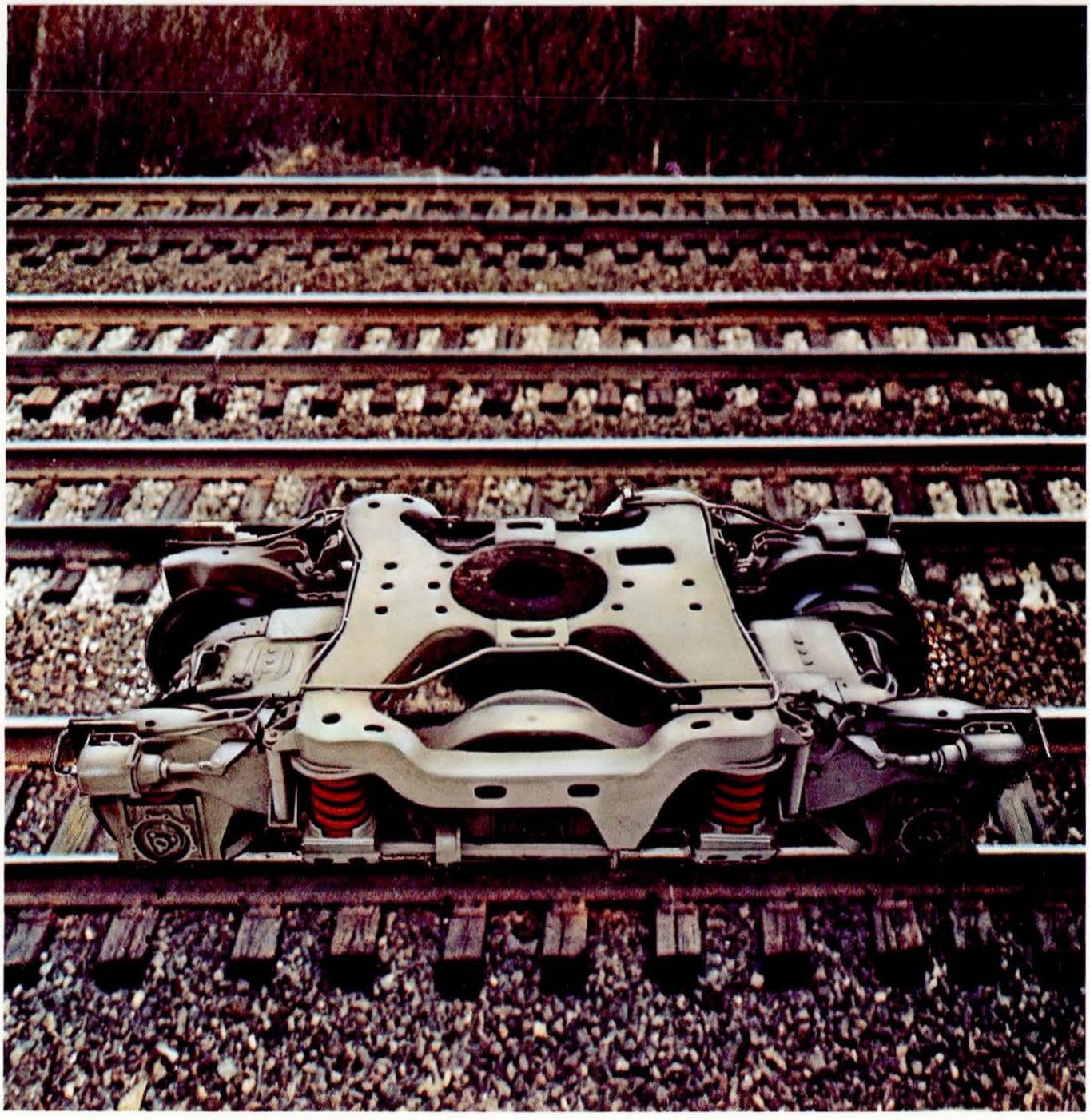
CF&I STEEL

SERVICE IN STEEL... IT'S PART OF OUR PRODUCT

Other CF&I Steel products for the railroad industry include: Barbed Wire • Woven Wire Fence • Fence Posts • Fence Stays • Nails and Staples • Cold Rolled Steel • Welded Wire Fabric • Slings • Tubing • Cutting Edges • Galvanized Steel Strand • Made in the U.S.A. by American steelworkers. CF&I Steel Corporation, Denver, Colo.

America's first new trucks in a quarter century.

The new ALCO three-axle, high speed truck.



Today ALCO is offering all-new locomotive trucks. They're the first dramatically improved trucks from America's locomotive industry in over 25 years.

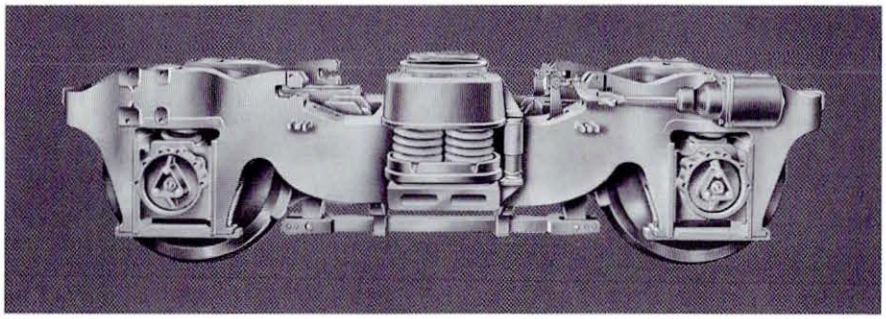
Both our two-axle and three-axle trucks are completely redesigned. Result: significantly lower maintenance and unsurpassed road performance for both models.

Lower maintenance costs.

The philosophy that dominated design of the new trucks was "keep it simple."

And we did. The new two-axle truck is actually built with 21 fewer parts than its predecessors. In the three-axle model, there are 11 fewer wear points. To lengthen time between servicing, we eliminated elliptic springs, spring planks, equalizers, swing hangers and pins. We switched to single shoe brakes, with correspondingly fewer parts to wear and maintain. Also the brake cylinders are high on the truck to avoid damage. And we changed to manganese steel liners. Result: we eliminated many critical wear points and improved life of the others.

We reduced maintenance costs several ways. For example, we left off



truck end transoms to improve access to traction motors for inspection and maintenance.

By keeping it simple, we've greatly reduced man-hours required for complete truck reconditioning. Our preliminary estimate is a 20 to 40% saving.

Improved road performance.

The new trucks perform better under all rail conditions.

In our new two-axle truck, shown above, we've lowered the tractive effort reaction point about 14 inches so it is actually two inches below axle center line. Result: an improvement in tractive effort utilization that effectively adds 10 cars to a 100 car train.

Our switch to double coil spring, rubber sandwich suspension with both vertical and lateral movement damped by separate snubbers gives a quieter cab and smoother rides. In fact, the total effect of lower point of pull and better ride makes our new trucks the finest trucks available today.

Interchangeability.

The wheel-and-axle assembly, including motor and journals are interchangeable with other ALCO trucks.

And our new two-axle trucks are interchangeable with our former models.

You become more competitive.

Our new trucks are designed to help you get ahead of all competition. By themselves, they're a significant reason to take a fresh, close look at an ALCO locomotive proposal. For information write ALCO Products, Inc., Dept. 1010-81, Schenectady, N.Y. 12305. A subsidiary of Worthington Corporation.

ALCO

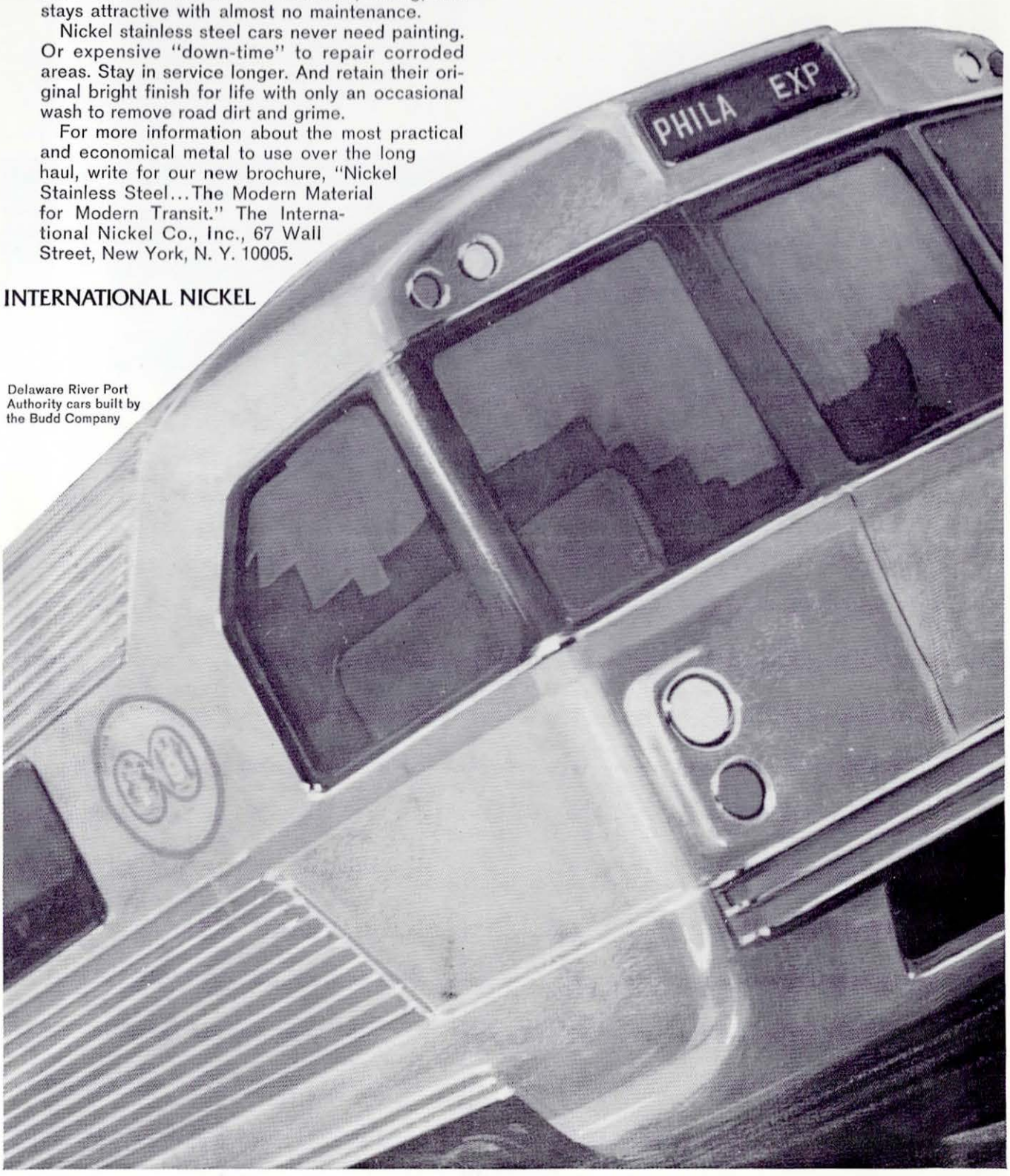
Thinking about extending car life?
Think about nickel stainless steel.

Nickel stainless steel adds years of life to transit cars. Stainless is corrosion resistant, strong, and stays attractive with almost no maintenance.

Nickel stainless steel cars never need painting. Or expensive "down-time" to repair corroded areas. Stay in service longer. And retain their original bright finish for life with only an occasional wash to remove road dirt and grime.

For more information about the most practical and economical metal to use over the long haul, write for our new brochure, "Nickel Stainless Steel...The Modern Material for Modern Transit." The International Nickel Co., Inc., 67 Wall Street, New York, N. Y. 10005.

INTERNATIONAL NICKEL



Delaware River Port Authority cars built by the Budd Company

the Griffin is a big wheeler

Griffin has the capacity to turn out nearly 6000 car sets of axle assemblies each year. We offer this service to railroads and car builders who do not have this capability at their own facility.

Mounted wheels can be delivered direct to your production line as needed. This will eliminate expensive intermediate storage and double handling.

For more than 90 years Griffin has been giving railroad men the best in wheels. We expect to keep on rolling.

GRIFFIN WHEEL COMPANY

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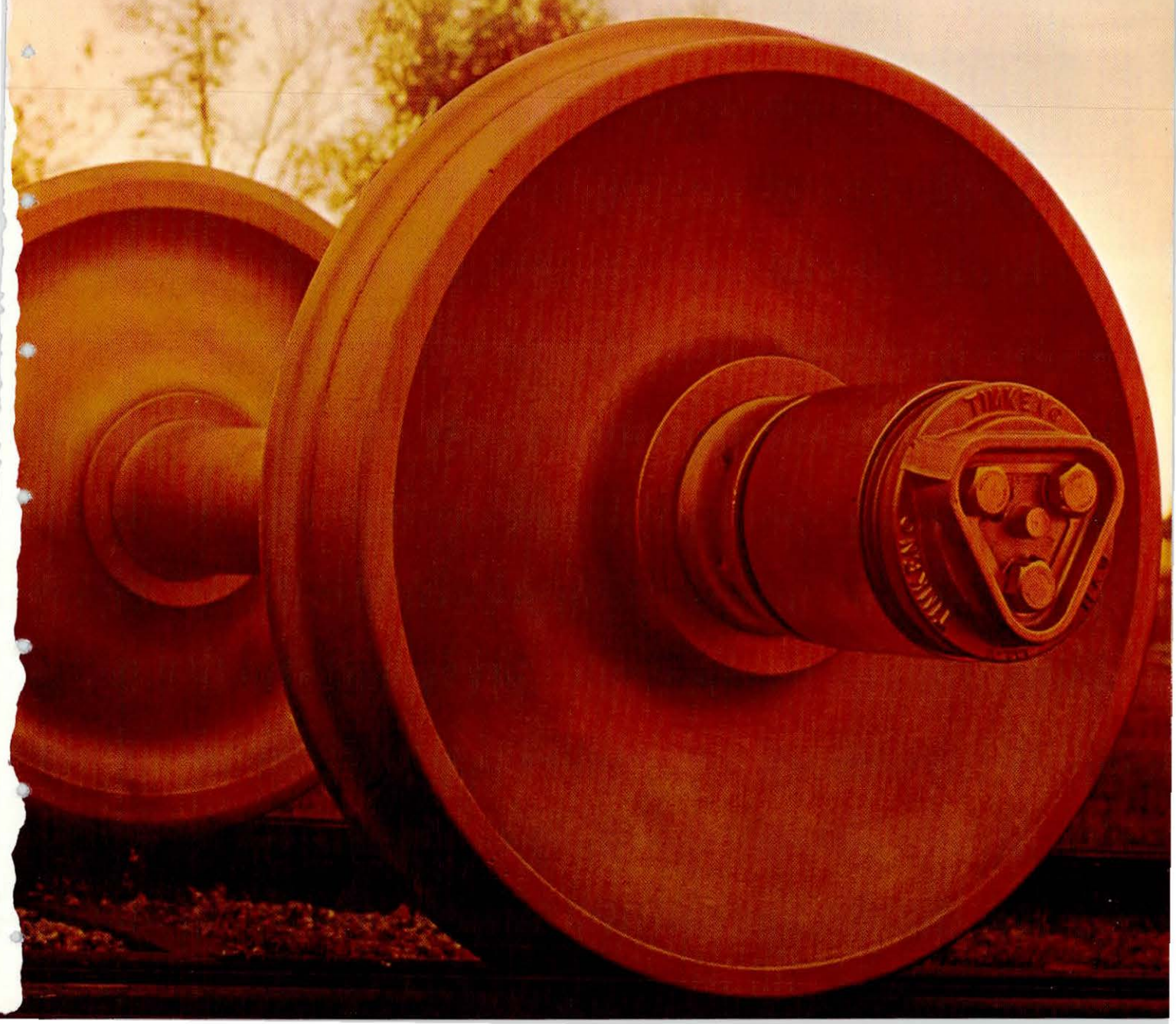

Magnavox **R. R. WEIST, DIRECTOR OF TRANSPORTATION**
The Magnavox Company

"In keeping abreast of the progress of the transportation industry, I have found that Railway Age effectively presents the railroad story as an integral part in the total concept of independent and intermodal service.

"The Freight Traffic Issues of Railway Age allow us the opportunity to gain varied and valuable ideas from experienced colleagues and to analyze these ideas for possible application into our own company programs. Through such cooperation in sharing transportation policy excellence, the whole society will benefit.

"This publication further personalizes its articles through documentary accounts as in the 'Traffic Poll' section or identifies them in 'People in the News.' To my knowledge, people still are the decision makers and the personal touch has no substitute."

R R Weist

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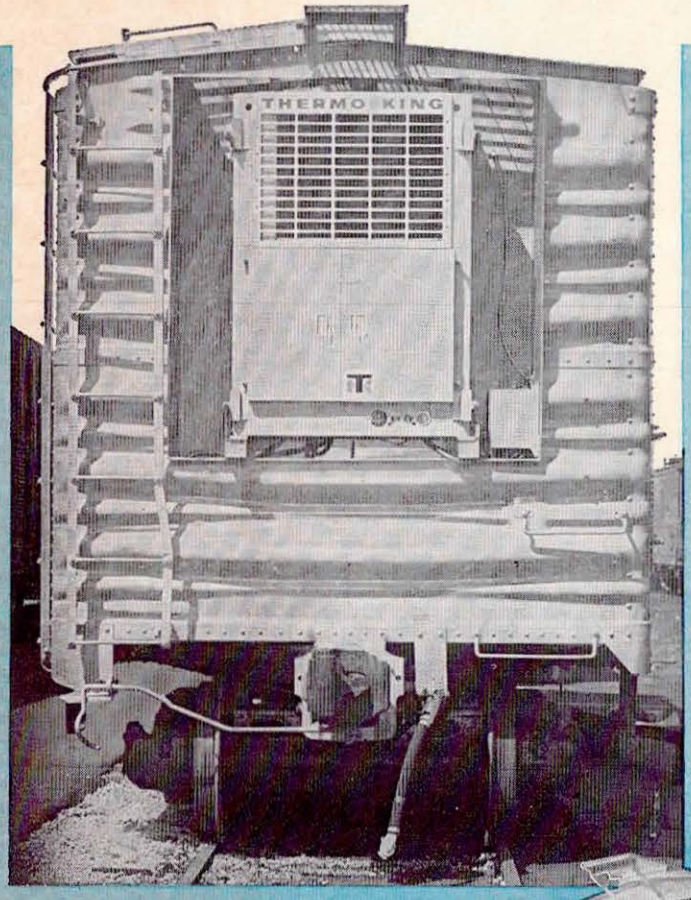
THERMORATED*

THERMO KING Model NWD INCREASES PAYLOAD SPACE 15% IN ICE BUNKER CAR CONVERSION



- Increases interior length from 33′ to 38′ to add 274 extra cubic feet in 40′ ice cars.
- A one-piece factory-tested unit, ready to run when shipped.
- Unit is simple to install and easy to service.
- Powered by rugged, dependable Mercedes-Benz diesel.
- Offers full range temperature control from −20°F. to 80°F.
- All components specially built for roughest transport conditions.
- Electric power standby option is available.
- A super capacity system that will easily handle 50′ cars as well.

Up front mounting of NWD system offers operational advantages. Condenser is cooled by unobstructed flow of clean air. Unit occupies no floor space, and only a few feet of cargo space. It is economical to operate under all types of transport conditions.

World Leader in Transport Refrigeration

THERMO KING
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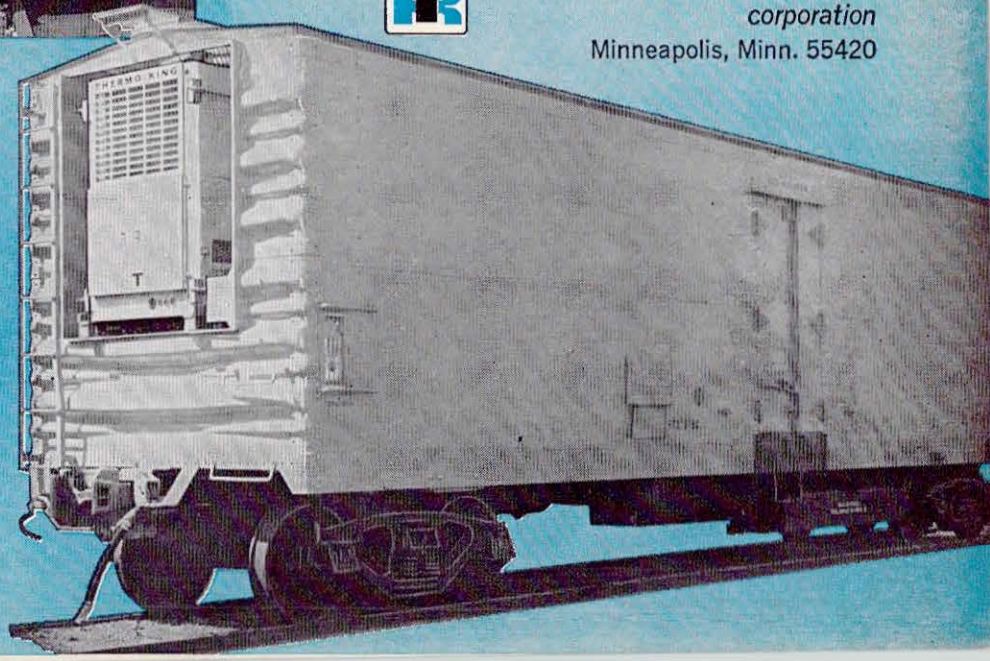
Minneapolis, Minn. 55420

Only THERMO KINGS are

*** THERMORATED**

- **VERIFIED PERFORMANCE**—Rated capacity with assured reliability
- **JOB ENGINEERED**—Developed for a specific requirement
- **TOTALLY "BUILT-FOR-TRANSPORT"**—Custom components with rugged durability
- **SERVICE/PARTS PROTECTION**—Factory authorized dealers everywhere



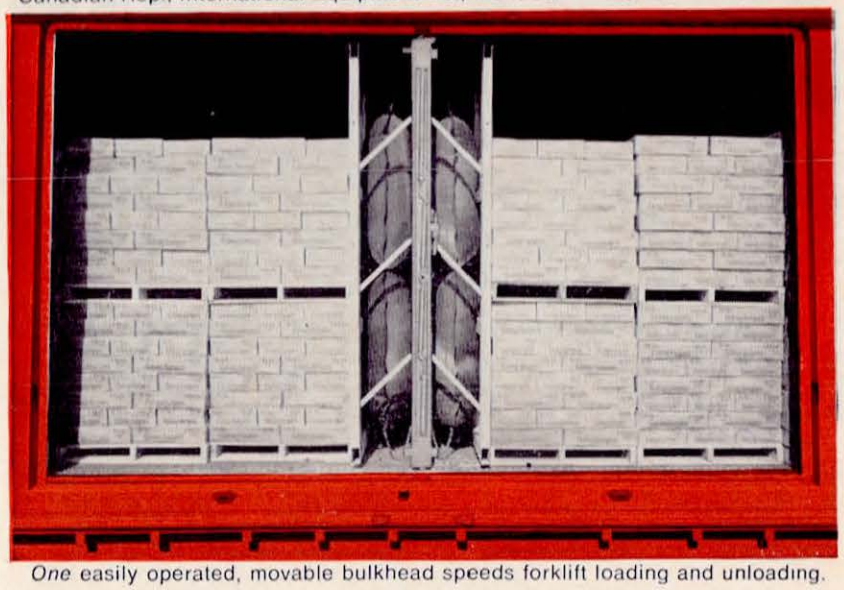
air-pak T.M. hits the road

Evans' New "Air-Pak" Pneumatic Bulkhead hits the road with an entirely new concept in freight car load control. One "Air-Pak" bulkhead outperforms two conventional bulkheads. It prevents shifting of lading in any direction, side to side or fore and aft . . . eliminates side fillers . . . lets you load the *entire* doorway.

"Air-Pak" Bulkhead is a result of two years development. A major food shipper using this equipment more than two years cut damage 50% over conventional restraining devices.

Load more into the car, cut handling time, and reduce damage. Write for literature. Evans Products Company, Dept. B-6, 13101 Eckles Road, Plymouth, Michigan 48170.

Canadian Rep., International Equipment Co., Montreal • Member RPI and ARCI



One easily operated, movable bulkhead speeds forklift loading and unloading.

evans™

TRANSPORTATION EQUIPMENT GROUP

Twelve cars demonstrating the Air-Pak "total load control" concept are now being used by shippers on America's leading railroads.

air pak™
TOTAL LOAD CONTROL

"WAFFLE-SIDE" CARS CARRY VARIETY OF LOADS

(Continued from page 78)

new cars are scheduled for general service throughout the SCL system. They are equipped to handle a broad range of loads—like packaged foodstuffs and machinery—originating in the growing industrial complexes along the eastern seaboard from Virginia to Florida. But, according to J. P. Taylor, Jr., SCL assistant general manager—sales and service, at least a portion, if not all, of the 400 all-purpose cars will be spending a considerable part of their service lives serving the Southeast's burgeoning lumber and paper products industry.

In hammering out the specifications for the cars, SCL officers leaned heavily toward the selection of special features which would tailor the cars to meet specific requirements of the lumber and paper products industry.

• **Highly versatile.** Smooth interiors plus the protective devices (including P-S Hydroframe-40 cushioning units) combine to make the cars ideally suited for transporting such finished goods as building materials, paperboard in rolls, liner board, and highly sensitive newsprint in rolls. To add to their versatility, the cars also have special features which make them readily adaptable for carrying bulk commodities, especially wood pulp. Among these features are ventilation holes located in protected areas near the top of the side posts. Wood pulp, either in bulk or baled form, is oftentimes loaded warm. Hence, a considerable amount of condensation may result as it cools. The vents help reduce this condensation and also help feed off any gases coming from the pulp.

The waffle-side cars have 16-ft-wide side doorways to help get oversized loads in and out of the cars. Since they will be used to transport bulk as well as finished products, the doorways are equipped with combination plug (6-ft) and sliding (9-ft) doors.

Two new P-S developments, which had been undergoing intensive testing in recent months, are appearing for the first time in the 400 SCL cars. One is the cars' corrugated steel end linings with 3/4-in-deep corrugations. The other is a hook-and-eye connection for brake rods and levers, an innovation which improves brake-rigging clearances in the truck area. Another feature of the cars is the combination steel-and-composition nailable flooring called "Plastinail," which is an SCL development. SCL officers feel it, like other special features of the new cars, will contribute to their service versatility.

The shipper-conscious SCL is expecting big things from the black-and-gold waffle-side cars. As Taylor pointed out, commodity-carrying flexibility and the low maintenance features add up to greater car availability for shippers in the SCL territory. ■

MFG HATCH COVERS

save time, money, tempers!

One man can open and close MFG Hatch Covers easily — (they have no torsion springs or lifters) because they're light weight, damage-proof, strong.

No rust or corrosion, no dents, no warp or twist; positive sealing for cargo protection — these covers weigh a fraction of steel covers, are trouble-free.

Use MFG protective covers for better performance, lighter weight, easier maintenance.

Round and trough hatch covers available.

Call or write for details:

MFG Molded Fiber Glass Body Company
Transportation Products Division
4671 Benefit Ave. 216 - 993-2171 Ashtabula, Ohio 44004

DIVIDENDS DECLARED

BEECH CREEK.—50¢, quarterly, payable April 1 to holders of record March 15.

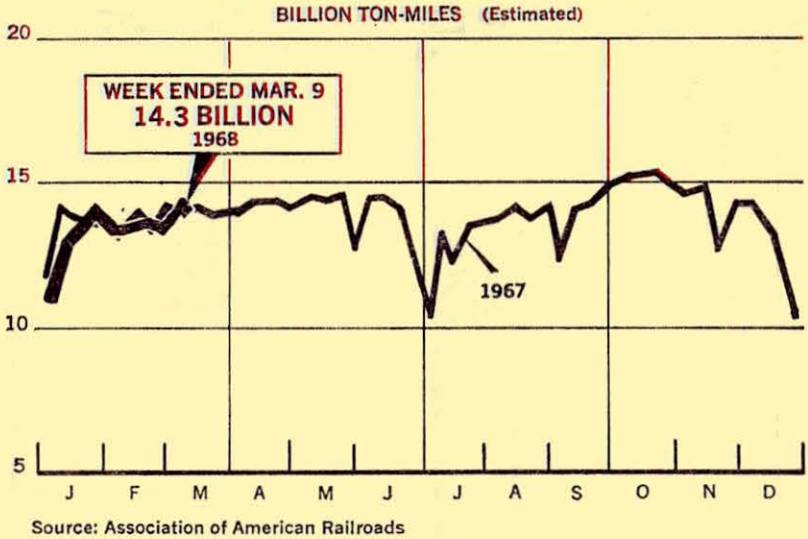
CHICAGO GREAT WESTERN.—5% Preferred, 62½¢, quarterly, payable March 29 to holders of record March 15.

GREAT NORTHERN.—75¢ quarterly, payable May 1 to holders of record April 15.

KANSAS CITY SOUTHERN.—50¢, quarterly, paid March 15 to holders of record Feb. 29; Preferred, 25¢, quarterly, payable April 15 to holders of record March 29.

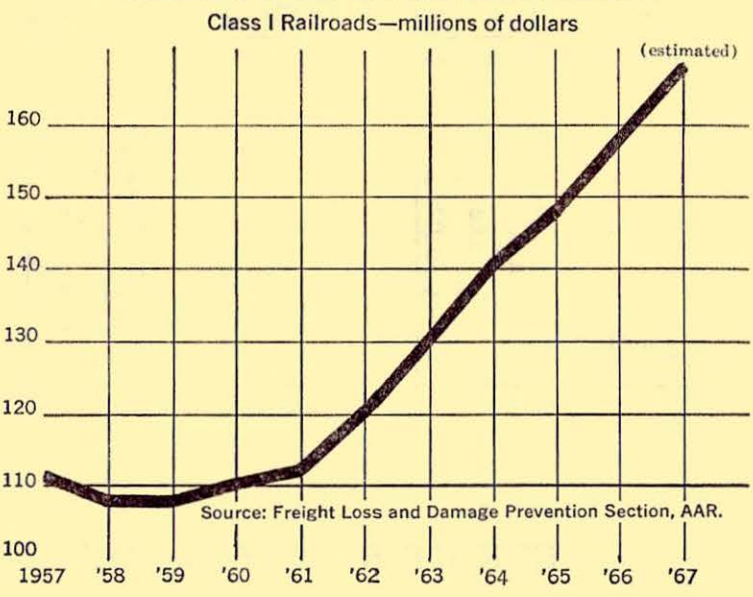
MAHONING COAL.—$15, payable April 1 to holders of record March 25.

RAIL FREIGHT TRAFFIC TRENDS



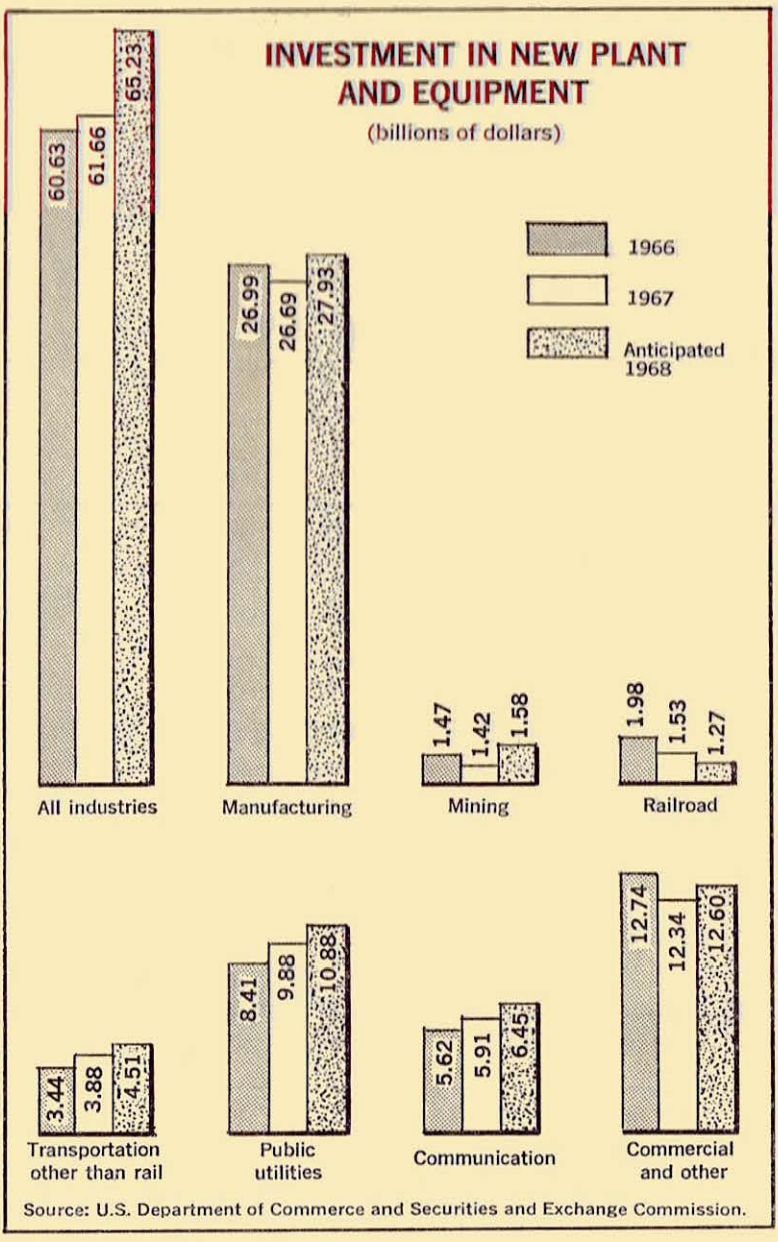
Source: Association of American Railroads

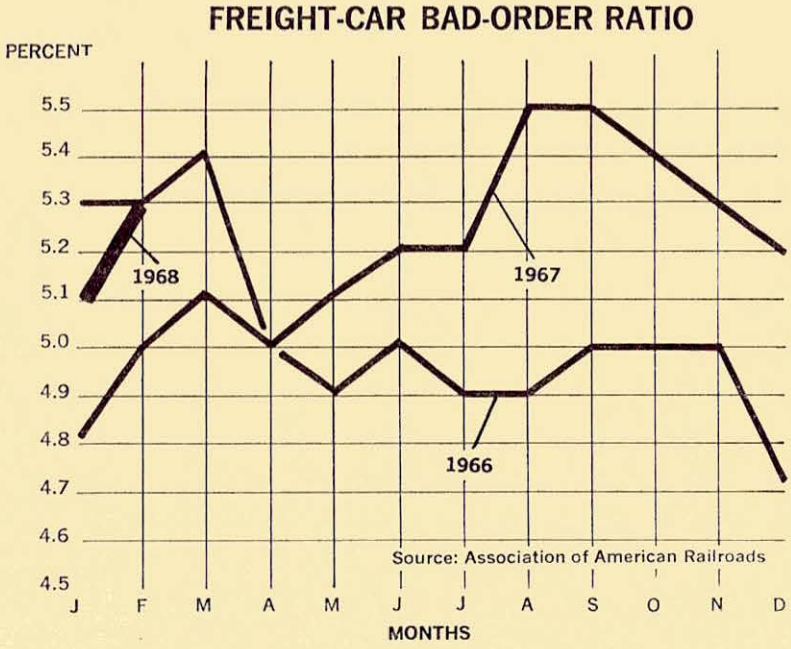
FREIGHT LOSS & DAMAGE PAYOUTS



Current statistics

Net income	
9 mos., 1967	$342,200,000
9 mos., 1966	659,900,000
Carloadings, revenue freight	
11 wks., 1968	5,550,017
11 wks., 1967	5,695,845
New freight cars on order	
Feb. 1, 1968	24,893
Feb. 1, 1967	51,450
New freight cars delivered	
1 mo., 1968	4,713
1 mo., 1967	7,217
Serviceable cars	
Feb. 1, 1968	1,401,643
Feb. 1, 1967	1,421,406


INVESTMENT IN NEW PLANT AND EQUIPMENT
(billions of dollars)
1966
1967
Anticipated 1968
60.63
61.66
65.23
All industries
26.99
26.69
27.93
Manufacturing
1.47
1.42
1.58
Mining
1.98
1.53
1.27
Railroad
3.44
3.88
4.51
Transportation other than rail
8.41
9.88
10.88
Public utilities
5.62
5.91
6.45
Communication
12.74
12.34
12.60
Commercial and other
Source: U.S. Department of Commerce and Securities and Exchange Commission.


FREIGHT-CAR BAD-ORDER RATIO
PERCENT
5.5
5.4
5.3
5.2
5.1
5.0
4.9
4.8
4.7
4.6
4.5
1968
1967
1966
Source: Association of American Railroads
J
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MONTHS

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended March 16 totaled 526,359 cars, the Association of American Railroads announced on March 21. This was a decrease of 5,299 cars, or 1.0%, compared with the previous week; a decrease of 10,603 cars, or 2.0%, compared with the corresponding week last year; and a decrease of 46,312 cars, or 8.1%, compared with the equivalent 1966 week. Ton-miles generated by carloadings in the week ended March 16 are estimated at 14.1 billion, a decrease of 0.1% below the corresponding week of 1967, and 3.3% below the 1966 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Mar. 16

District	1968	1967	1966
Eastern, including Allegheny and Pocahontas ..	211,486	209,980	235,066
Southern	117,600	121,056	120,165
Total Eastern and Southern Districts	329,086	331,036	355,231
Northwestern .	58,925	61,751	61,402
Central Western	100,132	105,180	114,745
Southwestern .	38,216	38,995	41,293
Total Western Districts	197,273	205,926	217,440
Total All Roads	526,359	536,962	572,671
Commodities:			
Grain and Grain Products	43,297	50,037	55,362
Livestock	1,207	1,407	1,749
Coal	103,236	106,648	114,942
Coke	9,032	7,067	9,017
Forest Products	40,032	40,973	39,852
Ore	17,787	18,383	19,754
Merchandise l.c.l.	4,203	5,182	6,728
Miscellaneous .	307,565	307,265	325,267
Mar. 16	526,359	536,962	572,671
Mar. 9	531,658	521,663	557,600
Feb. 24	533,755	534,359	544,836
Feb. 17	499,943	504,271	536,003
Feb. 10	516,730	530,212	537,702
Cumulative total, 11 weeks ...	5,550,017	5,695,845	5,873,507
Estimated revenue ton-miles (billions) 11 weeks ...	148.6	149.3	149.6

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended Mar. 9 totaled 25,775 cars, carrying 42,017 trailers, compared with 24,812 cars, carrying 41,114 trailers, in the corresponding 1967 week. Loadings for 1968 up to Mar. 9 totaled 237,818 cars, carrying 390,890 trailers, compared with 219,343 cars, carrying 358,546 trailers, in the corresponding period of 1967.

IN CANADA

Carloadings for the eight-day period ended Feb. 29 totaled 81,253 cars, compared with 67,859 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd. from Connections
Totals for Canada		
Feb. 29, 1968.....	81,253	29,160
Feb. 28, 1967.....	69,547	25,262
Cumulative Totals		
Feb. 29, 1968.....	561,900	198,737
Feb. 28, 1967.....	579,144	205,652

FREIGHT TRAIN CARS

• *Gulf, Mobile & Ohio.*—Ordered 200 box cars from Pullman-Standard at a cost of approximately $3 million. The cars will be equipped with P-S's Hydroframe-40 cushion underframes to prevent damage to lading. The order will bring GM&O's equipment purchases for the year to date to nearly $9 million.

• *Penn Central.*—Ordered 2,750 heavy-duty gondolas at a cost of $38.5 million. The cars, being built at the Samuel Rea shops at Hollidaysburg, Pa., include 2,150 52-ft 100-ton units, and 600 65-ft 70-ton cars. Deliveries will be completed in July.

• *February bad order ratio 0.3% higher than last year.*—Class I roads on Feb. 1 owned 1,479,571 freight cars, 16,469 less than on Feb. 1, 1967, according to AAR report summarized below. Bad order ratio was 0.3% higher than on Feb. 1, 1967.

	Feb. 1, 1968	Feb. 1, 1967	Change
Car ownership	1,479,571	1,496,040	−16,469
Waiting repairs	77,928	74,634	+ 3,294
Repair ratio	5.3%	5.0%	+ 0.3%

PIGGYBACK

• *Trailer Train.*—Ordered an additional 355 cars. ACF will build 25 89-ft standard level cars and 94 89-ft 4-in. all-purpose cars; Bethlehem Steel, 42 standard level cars, of which 10 will be 89 ft 4 in. long and 32 will be 89 ft long; and Pullman-Standard will construct 100 89-ft standard level and 94 89-ft 4-in. all-purpose cars. This brings TTX purchases since Jan. 1 to 1,010. As of March 14, Trailer Train had 44,116 cars in service or on order.

NEW FACILITIES

• *Louisville & Nashville.*—In connection with its planned entry into Chicago via Chicago & Eastern Illinois, L&N will improve interchange facilities at Evansville, Ind., through consolidation of L&N's Howell Yard and C&EI's Wansford Yard. The program will be designed to cut more than two hours from through-freight movement time.

• *Norfolk & Western.*—Plans to construct additional tracks and rearrange existing ones at its Detroit yard. At present the road's Detroit River ferrying operation is served by one yard which is used for both eastbound and westbound service, and consists of 23 tracks with a total capacity of 327 50-ft cars. The planned project will add nine tracks of 230-car capacity. Existing track will be rearranged to provide a westbound yard of 17 tracks with 297-car capacity and an eastbound yard of 15 tracks with 260-car capacity, for a total yard capacity of 557 cars. Accompanying improvements and modifications include providing four tracks for customs inspection, electrification of the raising devices on both ferry aprons, strengthening of one ferry slip, reconstruction of the yard office, and additional yard lighting.

YOU OUGHT TO KNOW

FreightMaster installs 50,000th car cushioner

A Union Pacific flat car got the 50,000th hydraulic cushioning unit manufactured by FreightMaster. The milestone unit was installed at ceremonies at UP's Omaha car-building facility attended by, left to right, Paul D. Howard, FreightMaster sales manager; J. M. Adams, UP freight traffic manager; M. G. Pastory, UP general car foreman; E. O. Joest, UP general mechanical engineer; W. C. Wright, FreightMaster sales engineer; and W. E. Johnson, UP assistant general purchasing agent. UP has equipped about 2,600 of its cars with the devices.

Milwaukee asks higher fares for commuters

Milwaukee has requested Illinois Commerce Commission approval of a 5% increase in one-way suburban fares between Chicago and stations beyond 25 miles—and a 10% rise between Chicago and closer points. Reasons for the request are steadily growing operational costs and the need to prevent further deficits from the operation of suburban service, Milwaukee says. The railroad handles on the average about 10,500 commuters each day on two routes.

New president appointed by Short Lines

Paul H. Croft, Jr., superintendent of the Evansville Division of the Louisville & Nashville, has been named president of the American Short Line Railroad Association. Croft, 40, succeeds Carroll P. Burks. He is an engineering graduate of the University of Illinois and has been in railroading since 1943, when he joined the Illinois Central.

Union officers get together with CN brass

Senior officers of the Canadian National —including President N. J. McMillan —last week wound up three days of closed-doors sessions with 50 top union officers representing some 80,000 CN employees. CN described the Montreal meetings as "no-holds-barred discussions on the state of the industry" designed to promote greater understanding between labor and management. The discussions dealt with revenue and expense forecasts, capital expenditures, work-force levels, pension plans, special early retirement plans—but no minutes were kept because, said McMillan, "to have it any other way would limit the purpose of the discussions and defeat the purpose of this form of communication." Victor Clements, head of the General Chairmen's Association, had this comment: "We learn what management is thinking and the course they are or will be taking, and we in turn let management know what is concerning us and give them an appreciation of our problems."

A way to measure express packages electronically

Canadian National has designed an electronic measuring device that will compute the volume of express and less-than-carload shipments, thus permitting fast determination of freight charges. The measurer, powered by either batteries or a standard AC wall outlet, consists of a probe, containing a 48-inch length of wire, a box housing the electronic circuits, indicators and a scale. To obtain the volume measurement of a rectangular package, the operator extends the wire along each of the three dimensions. Each measurement is recorded in a small memory storage unit and the volume is then computed automatically and indicated on the scale. Tubular and oval-size objects can also be volume-measured.

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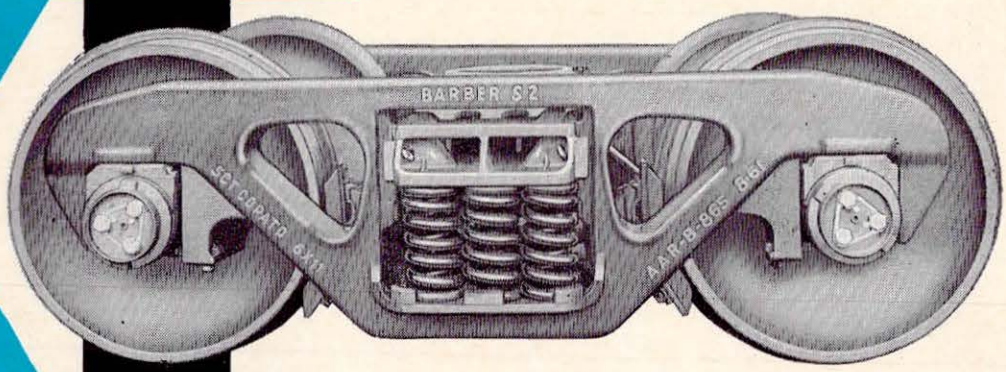

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Shippers cite L&D problems

(Continued from page 45)

shifts, and there is no protective packaging strong enough to withstand this. Our improvement in loss and damage has come about through use of load-divider cars."

Vincent L. Schraub, supervisor freight loss and damage, United States Gypsum Co., Chicago, said his loss and damage experience has improved in recent years. This has been, he added, because of the acquisition of DF equipment for transfer movements.

Schraub urged railroads to get more DF equipment. Also, he added, rolling stock should be upgraded, with particular attention to floors, walls and roofs. Railroad agents could help, he said, if they made comprehensive reports of damage and the contributing factors.

● **No one answer.** "I have been on L&D committees for many years," wrote Lloyd Meyer, director of transportation, Northwestern Lumbermen's Association. "It is my opinion that the greatest reductions [in loss and damage] can be accomplished by the shipper in packing and loading." He called for shippers to be more cooperative with the carriers.

A request for more well-cushioned box cars was made by J. W. Cassell, district traffic manager, Reynolds Metals Co., Sheffield, Ala. "DFB and DF equipment in cushioned cars would help shippers see that cars are better braced. When cushioned cars are not available, cars should be braced much stronger.

"Also," Cassell continued, "shippers should use adequate bracing in cushioned cars—and not depend upon the cushioning device too much. Better packaging in many instances would help."

Another Poll respondent who said his current experience with railroad loss and damage had improved considerably was Miles F. Tamisiea, general traffic manager, Theo. Hamm Brewing Co., St. Paul, Minn. He pointed out that railroads could make the situation better by installing cushion underframes on all cars.

● **Steady decline.** The loss and damage situation has been "getting worse since 1965," according to C.E. Joyce, manager customer and product protection, The Pillsbury Co., Minneapolis, Minn.

To alleviate the situation, Joyce said, railroads should reduce impacts, particularly in switching. "While cushion underframes and DFB cars may be able to stand increased impacts, the common box car in the same string cannot."

"Much worse!" is how Phillip T. Catalano, manager traffic and distribution, Steelcase Inc., Grand Rapids, Mich., described the current railroad L&D performance. "Give us," he said, "better conditioned cars suitable for our loading. Also railroads should improve their car handling."

A loss and damage increase of 95.3% in 1967 (over 1966) was cited by E.A. Parker, assistant traffic manager, Ashland Oil & Refining Co., Ashland, Ky. Railroads, he said, could provide more cars squipped with ride control (cushion) underframes and also indoctrinate crews with the need for careful handling, especially in and out of shippers' plants.

Robert A. Propf, director transportation and distribution, Geo. A. Hormel & Co., Austin, Minn., also said railroad loss and damage performance is worse than it has been in recent years.

● **Meat and TOFC.** "The poor results experienced," Propf explained, "refer for the most part to the handling of perishable meat shipments in trailer-on-flat-car service. It's our belief that the railroad personnel responsible for the operation and maintenance of this equipment are insufficiently trained to handle and operate mechanically refrigerated trailers. They probably lack the know-how of properly protecting the perishable commodities entrusted to their care.

"Poor handling on the part of the railroads, in terms of getting to destination on time, is also responsible for claims developing on perishable shipments. We've found, particularly in the east, that delivery schedules leave much to be desired." ■

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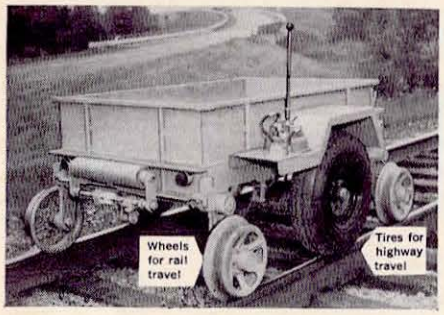

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LETTERS

The shipper's responsibility

St. Louis, Missouri

To the Editor:

The loss and damage problem gets worse every year. This is caused, to a great extent, by the very poor equipment furnished by the railroads. It is unbelievable. You would have to actually see it to believe it. We are in no position to reject many of these cars, because we have to keep our plants running, so we patch them up to the best of our ability and use them.

We realize that shippers also have a responsibility in this matter of claims. As shippers of grain and grain products, we know that we must be sure that our scales and weighing practices are above reproach. We also realize that there is room for improvement in this area. The Executive Traffic Committee of the American Feed Manufacturers Association has been working diligently on this matter for a number of years. Our latest effort in this regard is to conduct sessions at the AFMA Regional Production Schools. You will note that schools are being held in:

Atlanta, Georgia, March 19; Mason City, Iowa, April 2; Dallas, Tex., April 4; Salt Lake City, Utah, April 9; Kansas City, Mo., April 11; Peoria, Ill. April 16; Cincinnati, Ohio, April 18, and Philadelphia, April 30.

Our purpose is to stress the importance of good weighing practices. We intend to have present a representative of the Weighing and Inspection Bureau of the AAR and have him point out some of the malpractices that they encounter as they visit the various grain elevators and manufacturing plants throughout the country. I am certain that this educational program will be helpful to the railroads and to our industry. We make no money filing claims. Even if they are paid in full, as filed, we are out of pocket. We want to cut down on this expense. We are willing to do our part and expect the railroads to do theirs.

H. N. Johnson
Ralston Purina Company

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VIEWPOINT

Anti-L&D campaigns: Time to regroup our forces?

Careers in railroading are not without their frustrations—just ask any passenger-traffic officer, 'most any merger lawyer, or practically any specialist in freight loss and damage prevention. They could form a club—and chances are the L&D man would be elected president. After all, the orderly restructuring of passenger service can become an accomplished fact. Mergers do, at some point, come to a yes-or-no decision. But L&D prevention goes on forever.

The objective of freight transportation, of course, is not just to get the merchandise from Point A to Point B on some kind of schedule which meets the customer's needs. There's also a certain obligation to get it there in usable shape. And the record, in this area, is not all that good.

There's a certain unreal quality about L&D prevention. Sometimes it almost seems as if the more progress the industry makes, the tougher the L&D-prevention man's job becomes.

Damage-prevention hardware, for instance, is better than ever. To the best of their ability, in recent years, railroads have tried to build up the fleet of cushioned cars, device-equipped cars. Employee-training programs have been improved. L&D prevention people have stepped up their efforts to work with shippers in developing better loading practices. Still, the payout increases.

A top research-and-development man in the L&D field sums it up: "You feel like a greyhound, chasing that mechanical rabbit. You run fast, it runs faster. Certainly, the damage-prevention equipment available today is better than it was a few years ago, and there's more of it in use. At the same time, you're seeing higher train speeds, or longer trains. You have shippers who figure they can get by with less-sturdy packaging, lighter-weight containers and so forth. And how about the employee? Maybe he thinks careful handling isn't so important with the new equipment."

C&NW TRIES A BRAND-NEW APPROACH

What might be done? A number of roads are reorganizing L&D prevention and refocusing its efforts. The sharpest break with tradition may be the one made by Chicago & North Western (page 36), which has brought all the so-called casualty-loss factors under one roof—train accidents, personal injuries, freight loss and damage.

Top management on C&NW points the way. Chairman Ben Heineman and President Larry Provo make it clear to all concerned that improvement is not just hoped-for—it's expected.

North Western started out last year with a concentrated attack on the train-accident problem. Accident losses were cut sharply. Offhand, there would seem to be no reason for believing that the same kind of high-powered approach won't work in the other loss areas.

Two key factors stand out, in the C&NW program. First, direction comes straight from the top and the objectives are established in unmistakable terms. Second, a maximum involvement of line management is encouraged, even demanded. An impartial observer might question whether most L&D programs get this kind of treatment—and how much they suffer from the lack.

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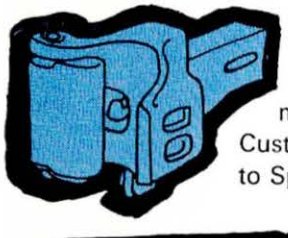

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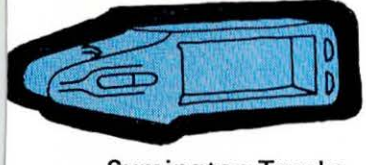

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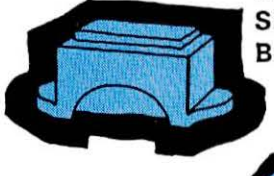

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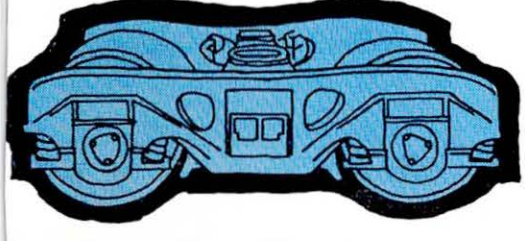

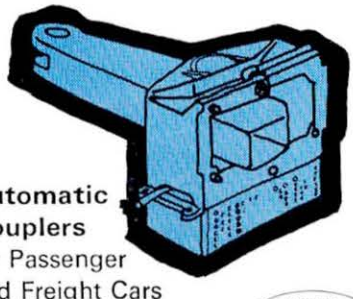

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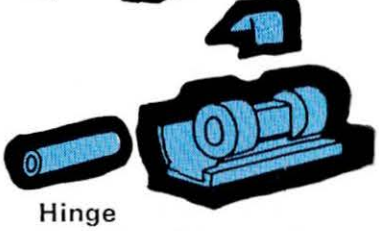

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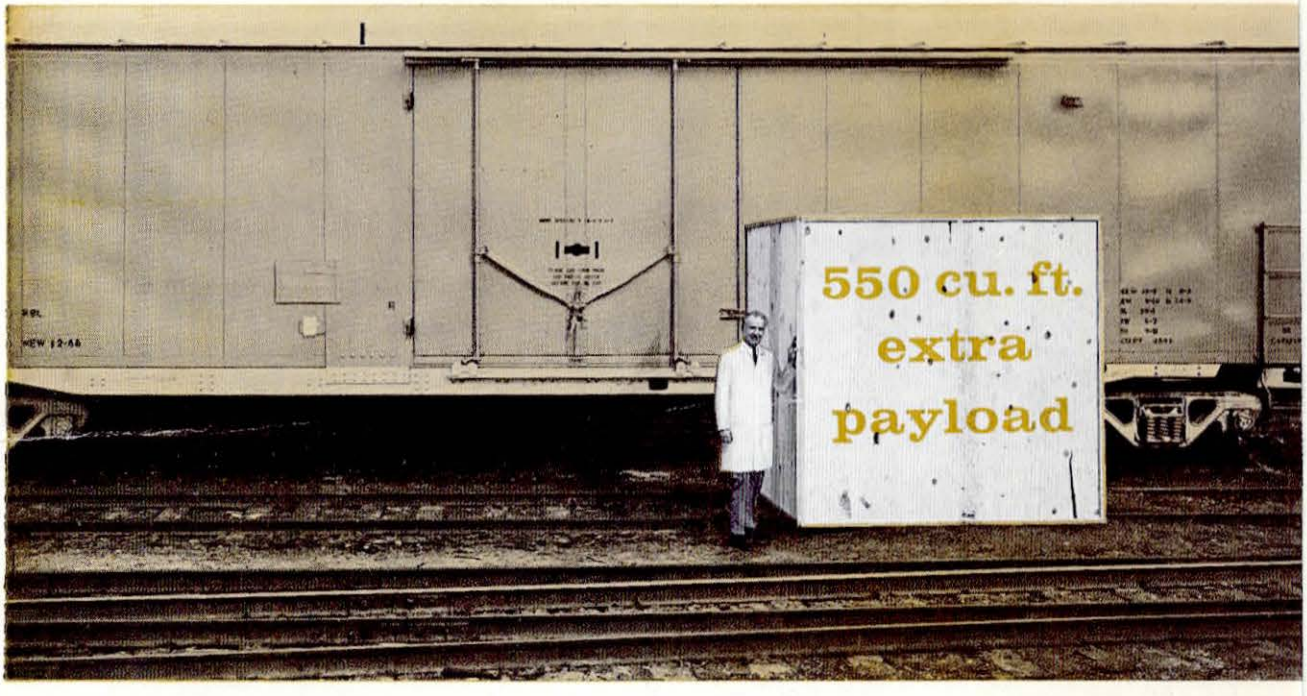

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